National Institute on Alcohol Abuse and Alcoholism

Alcohol and Health Monograph 4

Special Population Issues

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

Public Health Service

Alcohol, Drug Abuse, and Mental Health Administration

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National Institute on Alcohol Abuse and Alcoholism
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Foreword

With the publication of the Alcohol and Health Monograph series, the National Institute on Alcohol Abuse and Alcoholism (NIAAA) endeavors to present a current, comprehensive picture of the broad range of information available on alcoholism and alcohol abuse. The four monographs in the series illustrate the progress that has been made in recent years in all areas of alcohol-related activity.

The monograph on *Alcohol Consumption and Related Problems*, examines alcoholic beverage consumption and the nature of problems associated with consumption from various perspectives, including factors which may lead to alcohol-related problems.

Monograph No. 2, *Biomedical Processes and Consequences of Alcohol Use*, reviews current findings and developments in the field of alcohol-related research and describes the differential effects alcohol exerts on the major systems of the human body.

Monograph No. 3, *Prevention, Intervention and Treatment: Concerns and Models*, describes the three levels of response—primary, secondary, and tertiary—that have been developed to address problems resulting from alcohol use. This monograph reviews current approaches and strategies for prevention; presents the concept of and describes intervention activities; discusses treatment issues and methods; and enumerates currently available resources, as well as those evolving within the Federal, State, local and voluntary sectors to implement alcohol-related programs.

Monograph No. 4, *Special Population Issues*, provides a forum for examining the unique problems of special population groups whose need for alcoholism and alcohol abuse programs has been underserved. This monograph demonstrates that a base of scientific knowledge exists on prevalence, incidence and nature of alcohol-related problems of special population groups defined by sex, age, race and ethnicity.

The information contained in these documents represents the efforts of many experts and scientists in the field of alcoholism. We believe they will be of benefit and interest to the scientific and professional communities as well as the lay public.

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Chapter 1

Problems Associated With Drunkenness In Women: Some Research Issues

Genevieve Knupfer, M.D., Ph.D.

Abstract

This paper discusses research on the relation between drunkenness, and problems, norms, stress, and sex roles. Studies comparing male and female alcoholics in treatment indicate that, once far enough advanced, the alcoholic syndrome is much the same for both sexes, but that importance differences exist in the kinds of life experiences and social problems encountered. Data from general population surveys show that among drinkers men have a higher prevalence of problems than women, but when frequency of intoxication is held constant (which is almost never done) most of these differences disappear. (New data are presented on this point.) The important topic of social norms has been much neglected, but such data as exist show that drunkenness in far less tolerated in women than in men, which of course is the reason for the lower intoxication frequency in women. Prevalence of depressive disorder is higher among female alcoholics, while prevalence of sociopathy is higher among males. This sex differential is also found in the general population. It may be that there exists a genetic predisposition and that it manifests itself in these different ways because of the influence of cultural training for gender roles. Marriages of alcoholic women show a much higher frequency of disturbance than those of men, and the prevalence of alcoholic husbands in these marriages is especially striking and deserves exploration. Many studies have addressed the question of sex role conflict in women as an influence on drunkenness and alcoholism. The inadequecy of the concepts, measures, and samples employed is discussed at some length. A better approach, it is suggested, would be to focus on the various types or subcultures of women to elucidate the specific stresses and the particular exposure to intoxication-promoting environment. Fruitful subgroups might be women over 55 alone, young women with small children, women with alcoholic husbands, and employed women in various occupations, controlling for income in each case.

Introduction

This review will discuss the relation between drunkenness, on the one hand, and problems, norms, stress, and sex roles, on the other.

More comprehensive reviews of women and alcohol may be found in Gomberg (1976, 1979), Homiller (1977), and Beckman (1975).

It seems wise to avoid the term "drinking" and to refer instead to drunkenness, intoxication, or frequent intoxication because the term drinking is often ambiguous. Sometimes, even in research papers, it is used to mean drunkenness in the sense of the common lay expressions "he had been drinking," or "he is a drinker." Conversely, it is sometimes used to mean the opposite of abstaining, as in the frequently reported discovery that more men than women "drink." Or as in the debate about whether women's "drinking" has increased, it is sometimes unclear whether what is meant is "the proportion of abstainers among women has gone down" or "the proportion of women drunks has gone up."

Among the disadvantages of the loose use of the term drinking is its association with the Temperance Movement, for whose adherents, in fact, to drink or not to drink *was* the issue. Cultural norms today with respect to abstaining are different for most people in this country. It is probably not of great importance, except to a very small proportion of the population, whether or not anyone other than children abstains. Some evidence for this may be seen in a 1962 San Francisco study. Strong proabstinence feelings such as assent to the statement "People should never drink" characterized only 2 percent of the total sample and 5 percent of the women in the sample. At about the same time, in Iowa, Mulford and Miller (1960) found a considerably higher proportion of proabstinence sentiment: 31 percent of the sample agreed with the statement "Liquor is entirely and completely a social evil." These figures probably represent the two extremes in types of communities—San Francisco and Iowa. We have not found evidence on this point from recent studies, but it seems unlikely that there has been a change in the direction of more proabstinence sentiment. In any case, the belief that any drinking is sinful usually applies equally to both sexes. Of course, to the extent that women on the whole are expected to, and do, adhere to more conventional standards than men, more women may be expected to adhere to the abstinence creed.

Sex Differences In Problems Connected With Drunkenness

Alcoholism

Alcoholism, as addictive disease or psychological dependence, may be seen as one of the problems resulting from frequent intoxication. It is not the same as getting into trouble as a result of inappropriate behavior while drunk: trouble with the law, the family, or the employer. These troubles depend on the reactions of others, the tolerance of drunken behavior exhibited by those who interact with the drinker, the incentives for repeated intoxication provided by the environment, and the person-

ality of the individual. In other words, one thinks of the choices the individual makes as he or she balances the rewards and punishments of intoxication. In alcoholism, this process of balancing or choosing presumably no longer operates. Obviously, the element of choice is hard to evaluate because it is largely a subjective experience, but this does not mean that it is either nonexistent or impossible to evaluate. Some of the difficulties with the concept "loss of control" are discussed in Clark (1975), Storm and Cutler (1975), Polich and Orvis (1979), and Paredes (1973).

Comparisons of men and women in clinic samples, that is, people in treatment for alcoholism, have shown a number of differences. Women were found to have lower proportions of binge drinkers, shorter periods between onset and referral for treatment, lower frequency and quantity of intake, higher rates of marriage breakups due to drinking, higher rates of depression, and higher rates of suicide attempts (Beckman 1975; Lindbeck 1972; Pemberton 1967; Rimmer et al. 1972; Schuckit 1972; Sclare 1970; Selzer et al. 1978; Wanberg and Horn 1970; Winokur and Clayton 1968). Other differences—drinking at home or alone, hiding drinks, being protected from the consequences of drinking by a husband—have been noted (Curlee 1968). Some of the differences are probably the effects of the sample; a number of factors influence who goes to a treatment facility and whether one or another social class predominates, for example. The effect of socioeconomic status on these matters is extensively discussed in Schuckit and Morrissey (1976). Other factors are differences in gender role expectations and physiological differences.

Differences between men and women alcoholics have led to questions about how important or fundamental these differences are. Do they indicate a different "disease process," or are they merely reflections of the different conditions of life for men and women?

Telescoping. Several researchers have noted that women alcoholics, compared with men alcoholics, seem to "telescope" the development of a sequence of alcohol problems, which results in a shorter elapsed time from apparent loss of control over drinking until admission to a treatment program or a hospital. However, it is unclear whether this necessarily means that an addictive disease has progressed to the same degree in men and women. Entering treatment can be a result of having exhausted one's social supports, for instance. In this context, Mulford (1977) noted that more women than men reported marriage breakups due to drinking. The section below on Stressful Life Events also documents the points that more women than men can identify specific incidents, including domestic crises, as having led to treatment and that women may differ from men in their willingness to seek out treatment. Armor et al. (1976) noted that women alcoholics seem, on the average, to have less severe problems, as reported on admission to treatment. Mulford's (1977) data suggest that women alcoholics become critical of their drinking more quickly than men alcoholics—with

the elapsed time measured from the beginning of *others*' criticism of the alcoholic's drinking.

The Classic Syndrome. One approach to the question of whether there are substantial differences between male and female alcoholics, and what these differences might be, has been to analyze symptoms of alcoholism by means of factor analysis separately for men and women in treatment for alcoholism. This was done on samples from the Fort Logan Mental Health Center in Denver (Horn and Wanberg 1973; Wanberg and Horn 1970; Wanberg and Knapp 1970). In a large sample of 365 women and 1,657 men, 60 common symptoms of alcoholism (as reported by the patients) were analyzed; the authors were surprised to find a striking similarity in the factor solutions for the two samples. The eight factors accounting for most of the variance of the 60 symptoms are described by the labels (1) classical syndrome, (2) physiological reactions, (3) gregarious drinking, (4) steady long-binge drinking, (5) psychosocial benefit, (6) controlled drinking, (7) marital difficulty, and (8) early age drinking (Horn and Wanberg 1973). Similarity between men and women alcoholics was also found with a factor analysis using "situations related to drinking" (Deardorff et al. 1975). Deardorff's first factor was similar to Horn and Wanberg's (1973) classic syndrome factor.

It appears that, once men and women are far enough advanced in alcoholic drinking (which might be termed destructive, compulsive, or addictive drinking), their symptoms are much the same. What differs is the effect the frequent intoxication has on the lives of men and women because of the differences between them in social functions and cultural expectations.

Whether or not the time ordering of symptoms in the course of an alcoholic career differs by sex has not been established. Much is made of this time ordering in some circles, for example, in some treatment centers which use a modified form of the Jellinek curve to show the patient where he or she is in the progression. It does not seem of great importance to determine whether or not each alcoholic has the same history. Nevertheless, it could be argued that knowledge of the time ordering of symptoms might help in early detection and thus in prevention (Gomberg 1974). The classification of different types of alcoholism and different types of women who have the disease or the behavior pattern may be important for treatment strategies. The greater prevalence of depression in women alcoholics is a persistent finding and has led to some interesting investigations of subtypes of alcoholic women based on family history and prior hospitalization. This topic will be discussed in the section on Sex Differences in Types and Amounts of Stress.

Problems Reported in Surveys

The difficulty in comparing data from samples of alcoholics in treatment with data from samples of the general population has been

commented on (Room 1968). Such comparisons, were they possible, would be very useful indeed. First, estimates of the prevalence of alcoholism would be greatly improved, with all that that implies about knowing more about the magnitude of the problem and the needs for treatment. Second, we might learn how those not in treatment differ from clinic samples, and what help, if any, they are getting. However, for two reasons, population samples do not provide this information: (1) the proportion of people with serious alcohol-related problems is too small for general population surveys to yield a number anywhere near sufficient for study and (2) the criteria for classification are often different. A clinical diagnosis usually requires a good deal of time for interviewing and evaluating the seriousness of the problem, whereas a survey interview is relatively brief. Clinic samples can be, and have been, given the same checklists of questions that are used in surveys, but general population surveys cannot use clinical diagnosis. Furthermore, there are many different scales for the measurement of problem drinking and they do give different prevalences (Room 1977). Streissguth et al. (1977), applying eight different measures of problem drinking to 1,529 pregnant women, found poor interrelationships between the various measures and recommended multiple assessments.

The failure of various indexes of problem drinking to measure the same thing is not a question of validity unless problem drinking is conceptualized as a unidimensional pattern. If, instead, one views problem drinking as a set of different risks from drunkenness, the exact nature of which depends on what the individual is doing while drunk, it becomes of interest to look at the differences in problems. This approach would seem logical because norms, whatever they may be in a given situation, apply much less to amount consumed than to other aspects of behavior; unfortunately, surveys usually report frequent intoxication as one among other problems. (Early in the problem-drinking surveys, we did this, with the idea that some people might admit to large intake but not to resulting problems, and vice versa [Knupfer 1967].) Surveys also tend to use combinations of problem questions, such as scales of "social consequences" or "interpersonal problems."

Cahalan (1970) presented various problem scales by sex, but usually there was no cross-tabulation by the index of frequent intoxication, which was used as one of the problem indexes rather than as a risk factor. There was a cross-tabulation in Clark (1977), but the index of alcohol consumption was rather low for inferring intoxication and the problem index combined several questions. Johnson et al. (1977, table 24) showed sex differences in consequences of drinking for "heavier drinkers." The only "consequence" more frequent for women than for men was "Doctor said alcohol injured health." The index of "heavier drinking" was set at a rather low level, which may have affected the

results. Polich and Orvis (1979) have, we hope, started a trend by tabulating various problems by frequency of drinking eight or more drinks. However, because there were no women in their sample, sex differences cannot be studied. More information on frequent heavy drinking would be yielded by combining samples from several different surveys. The degree of cooperation among surveys required for such study would, of course, involve agreement on identical questions; such agreement may be difficult to reach.

As a small effort to fill this gap, some data were retabulated combining two surveys from 1977-78; the question "How often do you have eight or more drinks?" was used as a measure of frequent intoxication. The responses "once a week" and "several times a week" were used as an index of frequent intoxication. Of course, even at these levels of intake the range was very great: anywhere from 8 ounces of whiskey once a week to 2 quarts daily. It seems likely that the actual intake of the men was higher than that of the women, which would make the observed differences, shown in table 1, even more significant.

Even with the relatively large size of the combined samples, the number who were intoxicated according to this index was clearly too small for reliability. Nevertheless, the differences between men and women are of interest. Substantially more men than women said they had been arrested for drunk driving. For this problem, the risk from being intoxicated seems to be greater for men. It may well be that other factors enter in: we know that men drive more miles, and the police may be more likely to arrest men. Men probably drink more on the whole. It may also be that intoxication tends to release in men more careless or aggressive driving. More interesting is the opposite result from the other questions. More women than men in the frequent intoxication category said they had—

- lost a job because of drinking,
- had a spouse or partner get upset or show concern,
- had someone in the family get upset or show concern,
- thought they really ought to stop drinking or cut down,
- thought they might lose control.

A good illustration of the importance of question wording may be seen in the different responses to the following two questions: "Did you ever think that you might 'lose control'—that is, were you afraid you might not be able to stop drinking once you started?" and "Have you ever thought that you really ought to stop drinking or cut down?" The second question elicited many more "Yes" answers, and the difference was especially large for men, which may reflect their reluctance to admit to weakness. Perhaps just the word "afraid" aroused defenses more

characteristic of men than of women. For whatever reasons, the second question as an index of concern about one's drinking showed no sex difference, while the first one showed quite a large difference.

The results suggest that women who get drunk run a greater risk of upsetting those close to them and of worrying about their own drinking. This weighs in favor of one interpretation of the so-called telescoping phenomenon: women get into treatment after a shorter period of problem drinking because their behavior tends to cause more repercussions in their environment; that is, it is more "deviant." Women also may be less likely to deny problems and more likely to worry and to seek help than men. However, these interpretations must remain tentative in view of the very small numbers on which the percentages in table 1 are based.

Norms and Contexts

In a 1964 San Francisco sample, 76 percent thought drunkenness was worse for a woman than for a man, while 1 percent thought it was worse for a man (Clark 1977). That is an impressive degree of consensus. (This was in response to several open-ended questions beginning with "What do you think of a man who has had too much to drink?" and "What do you think of a woman who has had too much to drink?")

There has been some talk in recent years about fairly radical changes in these normative standards. Perhaps the norms have changed, but we have not been able to find any convincing evidence of it. One of the studies cited as showing a change is Rachal et al. (1975), but this was a study of adolescents and the question was about drinking, not about drunkenness. The same is true in Wilsnack (1978), where the question was, "Is it worse for a woman to drink than a man?" Stafford and Petway (1977) compared attitudes toward a drunk man and a drunk woman using 16 bipolar adjectives such as honest-dishonest, calm-excitable, responsible-not responsible. They found no differences between ratings of the drunk woman and the drunk man. However, the particular method used does not seem to get at the essence of such a norm, which is better elicited by a direct question. To the extent that there is a differential norm about being drunk, it is not because a drunk woman is more irresponsible, dishonest, or selfish than a drunk man, but because she should not be drunk. As Clark

Table 1. Percentage of Those Reporting Frequent Intoxication[1] Who Had a Given "Problem," by Sex

Drinking Problem	Percent Answering Yes to the Problem Question[2] Men	Women
Have you ever[3]		
1. Been arrested for drunk driving?	34[4]	14[4]
2. Lost a job because of drinking? (employed only)	6	15
3. Been separated or divorced because of drinking? (married and formerly married only)	14	15
4. Had someone in the family upset?	53	73
5. Had spouse or partner upset?	53	67
6. Thought you might lose control?	22[4]	60[4]
7. 81 Thought you ought to cut down?	87	
Total frequently intoxicated	80	15
	147[4]	36[4]
	1,221	1,321
Total N	2,009[4]	2,217[4]

SOURCE: Except where indicated, the data in this table reflect a special tabulation from the Social Research Group data study on Prevention (described in Wallack 1979). Data were collected in two waves, fall 1977 and spring 1978, in three different sites in northern California: Alameda County, Contra Costa County, and Stockton.

[1] Frequent intoxication = eight or more drinks one or more times a week.

[2] "Yes" = all those not answering "never."

[3] Complete text of questions may be found in Wallack 1979.

[4] These results are based on a larger sample, combining the Wallack studies with those of Cahalan and Treiman (1976*a*, 1976*b*) in San Francisco and Marin County.

(1977) pointed out, these norms are "not dependent upon rational arguments for their support, but are expressions of values. In a way, it makes no sense to ask 'Why?' in dealing with such matters" (p. 160).

If there has been an increase in tolerance for drunkenness in women, the evidence is not at hand. Considering how important this is to the "intoxication promoting environment," the subject is worthy of study. Norms are not easy to study because degrees and dimensions are involved. Even in situations where heavy drinking is encouraged, there are varying standards of excess. There are covert norms, which direct questions may not uncover. Covert norms are not openly or officially advocated. Often they come out very clearly in passing comments or in jokes. There are levels of respectability where they seem not to penetrate, yet they are all around us. One such norm is the praise of drunkenness. About half the birthday cards seen in a pharmacy recently were of this nature, for example: "I was talking to my plants and know what they told me you should do to have a Happy Birthday? . . . Stay potted." Yet it is doubtful that a question in an opinion survey which asked, "Do you think the best way to have fun is to get drunk?" would get many assents. It is not unusual in certain situations to urge people to drink more, even to "ply them with liquor," but it might not be easy to get those who do this to say, "I get a kick out of watching people get drunk," or "I like to see them make fools of themselves." It seems plausible to assume that in some subcultures getting drunk is a part of the masculine role, yet to the statement "A real man can hold his liquor" over 80 percent of the respondents expressed disagreement, with almost no difference by age or sex (Wallack 1978).

Clark and Midanik (in press) reported a thorough and detailed review of research on taverns. The studies using participant observation discussed some of the complexities of norms about the "middle class binge" (Ossenburg 1969), "legitimate deviance" (Listiak 1974), "normal trouble" (Cavan 1966), and "manly flaws" (Liebow 1967). The male role probably includes more "time out" for overlooked transgressions than the female role, as expressed in the old proverb: "Man works till set of sun but woman's work is never done." And this may affect attitudes toward drunkenness in women. It is not only because a women has work to do but also because her role is defined as much by the propriety of her conduct as by the tasks she accomplishes and therefore she is in a sense always on stage. This means that drunkenness can be an *excuse* for deviant behavior in men more than in women.

Drinking problems are generally considered to be related to deviance and conformity. It is appropriate, therefore, to study the rules of conduct that drinkers are either flouting or obeying. Norms probably vary by age,

sex, social class, and other social characteristics. Further small group distinctions also need to be made. Thus, although over half of a sample of young single men agreed with the statement "It is all right to get drunk once in a while," that leaves almost 50 percent who did not agree. Information on what the subject's friends and family think about drinking is relevant here.

The study of contextual and situational variables, as Clark (1977) called them, may be done by asking about hypothetical situations, by direct observation, or by fairly detailed classification by occupation, class, marital status, etc. The hypothetical question approach may, for example, present vignettes of situations and ask for opinions. In one of these vignette series, considerably more permissiveness about getting drunk was shown for the man who gets drunk one or two evenings a week, but has not gotten into "trouble," than for the housewife or the female office worker or the man who had lost several jobs, in that order (Clark 1977). "Heavier" drinkers were much more tolerant than other respondents in the first case, but no different in the last case.

In an Australian study, respondents were shown pictures of five different drinking situations (Encel et al. 1971). The picture showing housewives having a drink together at home elicited more divergent responses than the other pictures, with 25 percent of the responses being at either of the two extremes of the permissiveness scale.

As for direct observation, there have been several studies of taverns, but these have not yielded a great deal of information relevant to women (Clark and Midanik in press; Cutler and Storm 1975; Gerstel et al. 1975). In a study of a working-class tavern, it appeared that women who drank a lot and came alone were not accepted by the regular customers (LeMasters 1975).

A Finnish study of alcohol consumption at afternoon dances observed various aspects of behavior (Haavio-Mannila and Snicker 1979). Although all the women attending these dances drank some alcohol, and most of them drank more than they would have otherwise, a marked difference was noted in the amounts consumed by men and women. Almost all of the women stayed below their intoxication level, but almost all of the men exceeded it.

A behavioral observation study of a college pub showed similar sex differences in amount of liquor consumed (Rosenbluth et al. 1978). In that study, further interesting differences in consumption were observed

according to whether the drinkers were in groups, in same-sex dyads, or in opposite-sex dyads.

Studies of smaller subgroups are difficult to do as a byproduct of general population surveys because of the small numbers involved. For example, in order to study married, gainfully employed women with children at home, one would want to compare those with high and those with low incomes. This would require special samples. Some work of this type has been done by Radloff (1975) in connection with Role and Social Position.

Sex Differences In Types And Amounts Of Stress

Although most authors would not go so far as to say, "Alcoholism, very simply, is individual reaction to stress" (Kent 1967, p. 3), it seems plausible to assume that stress is a precipitating factor, especially once intoxication as a coping mechanism has become fairly well established and before intoxication itself has become a self-perpetuating motive.

An experimental note on intoxication as a self-perpetuating motive was provided by Higgins (1972), who studied amounts of alcohol consumed by alcoholics and social drinkers in an anxiety-provoking situation. Quantities of alcohol consumed were not related to differences in amount of anxiety, but were related to whether or not subjects were alcoholic.

In this review, the discussion of stress will be limited to depressive illness, stressful life events, and alcoholic husbands.

Depression

To many observers, women alcoholics have seemed to be somehow "sicker" than men alcoholics. Large proportions of women alcoholics seem to be anxious and depressed, with histories of unhappy childhoods, suicide attempts, and broken or otherwise miserable marriages (Belfer et al. 1971; Curlee 1968; Hoffman and Noem 1975; Mogar et al.

1970; Tamerin et al. 1975). The alternative interpretations of these findings have been well stated by Schuckit and Morrissey (1976, p. 11):

> Does alcoholism cause more psychiatric disorder in women? *Or* does a woman have to be more "ill" to overcome the more intense social stigma against heavy drinking and demonstrate alcoholism? *Or* do women displaying alcoholism more frequently have other major psychiatric disorders of which alcohol problems are symptomatic? *Or* is psychiatric disorder in women alcoholics the result of the severe social reactions taken against women who abuse alcohol?

One of the difficulties in assessing the higher rate of depressive symptoms in women alcoholics is that different criteria are used in different studies. It is important to distinguish for clinic populations (a) depressed affect as an effect of alcohol which wears off after a period of abstinence, (b) sadness and discouragement due to disturbances in the environment and functioning caused by frequent intoxication, and (c) prior or concurrent episodes of clinical affective disorder. Criteria for the last type of "depression" have been outlined in Feighner et al. (1972) and Woodruff et al. (1974). Researchers, using rigorous criteria for both alcoholism and affective disorder, have done some very interesting work on sex differences, familial incidence, and subtypes of alcoholics (Cadoret and Winokur 1974; Schuckit 1973; Schuckit et al. 1969; Winokur and Clayton 1968). The high familial incidence of alcoholism in the relatives of alcoholics has consistently been noted. Cotton (1979) made a thorough review, tabulating the results from over 30 studies.

The concordance of alcoholism and affective disorder in families has led to the distinction between primary and secondary alcoholics. Alcoholics having no prior psychiatric illness have been called primary alcoholics and the others secondary alcoholics. The two major psychiatric diseases in secondary alcoholics are affective disorders, which are more common in women, and sociopathy, which is more common in men (Schuckit 1973). In classifying patients as sociopathic, it is important to use careful diagnostic criteria rather than relying on scales labeled "sociopathic," such as scale 4 of the Minnesota Multiphasic Personality Inventory (MMPI). MacAndrew showed in 1963 and again in 1978 that this scale's correlation with alcoholism rests on three items: "I have not led the right kind of life" (True), "I have used alcohol excessively" (True), and "I have never been in trouble with the law" (False). It must be remembered that the meaning of such scales lies in the questions they ask and that statistical manipulations and correlations with criteria do not settle their validity for any and all purposes—

although "MMPI enthusiasts have been vociferous in their denigration of 'item content'" (MacAndrew and Geertsma 1963, p. 36).

Family histories of women alcoholics, compared with those of men alcoholics, show far greater incidences of affective disorders in first-degree female relatives and of alcoholism in all relatives. These findings have led to the postulation of a "broad spectrum" disease process presumably consisting of some sort of vulnerability which in men is more likely to result in alcoholism or sociopathy and in women more likely to result in depressive illness.

Stressful Life Events

It is well known that alcoholics can find innumerable reasons or excuses for drinking. This is also true for heavy drinkers in general population surveys: when respondents were given a list of reasons for drinking and were asked to say which were very important, fairly important, or not at all important, it was found that heavy drinkers, on the average, checked as "very important" four times as many reasons as did light drinkers (Knupfer 1963). A more recent study showed similar results. A series of questions beginning with "I drink when . . ." were administered to 245 alcoholic patients in treatment and 132 assorted controls (spouses, students, and staff members). The questions seem more related to the concept of "reasons for drinking" than that of "situations related to drinking," although the latter concept was used by the authors. The treatment group was higher than the control group on all factors, meaning that they checked many more positive responses (Deardorff et al. 1975).

However, there appears to be a difference between men and women alcoholics in this regard. Ever since Wall (1937) reported that relatively more women than men can point to some stressful circumstance as having led to their heavy drinking or alcoholism, many researchers have made the same observation: Belfer et al. (1971), Cramer and Blacker (1966), Fort and Porterfield (1961), Hoffman and Noem (1975), Lisansky (1957), Lolli (1953), Tamerin et al. (1976), and Wilsnack (1973). The interpretation of these reports is not entirely clear. A possible implication is that alcoholism in women is more "reactive," which fits with what we know about women's roles in relation to drinking: fewer women than men would seem likely to become alcoholics simply by continuing a long period of socially acceptable heavy drinking which they fail to grow out of.

On the other hand, since many of the stressful events cited in different studies have to do with menstruation and childbearing, comparisons with men are, of course, not relevant. Furthermore, "one need not deny the very real discomforts of the premenstrual period for some women, but its use as a rationalization and defense . . . should be understood" (Gomberg 1976, p. 609). Gomberg also noted that menstrual complaints may be learned, culturally expected responses; she cited Browne-Mayers et al.'s (1976) interesting comparison of women alcoholic patients in the same hospital at different times: in 1933, 80 percent of these patients reported dysmenorrhea; in 1972, 23 percent.

Nevertheless, there are other stressful life events, not directly linked to reproductive functions that women alcoholics cite more frequently than men: death, divorce, depression, suicide attempts, and marital troubles. We do not know if the greater reporting of these stresses by female alcoholics is due to a general sex difference in the frequency of reporting specific stresses. A recent national survey not yet fully analyzed will give us some answers to this question (Clark 1981). Again, social class has to be taken into account, because there are likely to be variations in cultural expectations, health services, mortality rates, and preexisting psychiatric problems. These are discussed in Morrissey and Schuckit (1978), who report a study of stressful life events among women seen at a detoxification center. The temporal relationship between the reported life stresses and the onset of drinking problems was carefully investigated, and results are shown for three groups: primary alcoholics, secondary alcoholics, and problem drinkers. The conclusion was that "no strong temporal associations were found between the occurrence of stressful life events and the onset of alcohol problems." The great majority of stressful life events reported occurred at a temporal distance of at least 3 years before the first alcohol-related problems. This does not mean that stress has nothing at all to do with problem drinking or alcoholism. An unhappy marriage, for example, is not usually defined as an event. It seems plausible to assume that in many cases an accumulation of difficult life circumstances (not necessarily a specific event) can be coupled with an increasing tendency to seek refuge in alcohol, which can progress to alcoholism. More research is needed on this subject; the negative findings in Morrissey and Schuckit (1978) appear to conflict with much research showing an association between certain significant life events, on the one hand, and physical and mental illness, on the other (Dohrenwend and Dohrenwend 1974; Radloff 1977).

Husbands of Alcoholic Women

Husbands of alcoholics have not been much studied, and what little information there is comes mainly from wives' reports, clinical impressions, or unspecified sources (see the thorough review by Jacob et al. 1978). Some studies reported that the husbands were domineering (Flintoff 1963; Myerson 1966; Wood and Duffy 1966); others that they were passive (Busch et al. 1973; Reith 1974). Their lack of interest in their wife's treatment has also been noted in passing (Murcia-Valcarcel 1969; Pemberton 1967). However, there is one constant finding, namely, the high prevalence of alcoholism or problem drinking among the husbands. Some of the data are summarized in table 2.

It is noteworthy that in almost all the studies listed in table 2 the information on husbands was presented incidentally, with little or no comment. Sometimes it was discussed as a stress but rarely as an influence on the woman's drinking. Yet, as Gomberg (1974) pointed out, social contagion is more likely to go from the superior to the inferior status: the husband is more likely to influence the wife to drink than vice versa, especially as he is more likely than she to be accustomed to relatively heavy drinking. The old-fashioned notion of the wife's role as representing more conventional and moralistic values has become increasingly unpopular, and she is often urged, instead, to share her husband's interests and to join him in his activities.

The importance of the alcoholic husband as a factor in the life of the alcoholic woman seems compelling, whether it is regarded as stress, as feminine inadequacy, as assortative mating, or as a drunkenness-promoting environment. There is a high risk of loss of income and of violence, not to mention the more subtle burdens of impaired communication and understanding. It must be kept in mind that, for most women, marriage is a more central factor than it is for men: it determines a woman's social status, her income, much of her children's environment, and much of her personal satisfaction. It is not as easily changed as employment, and it is most often entered into at an early age, when the woman is inexperienced and immature. Seventy-five percent of husbands are older than their wives. Caution must be exercised when making interpretations about mate selection in the absence of information about the husband's alcoholism at the time of marriage. To expect a young woman (most women marry before the age of 24) to know which young men in her circle are or are not going to become alcoholics seems unreasonable, considering that none of the experts in the field can make such a prediction.

Table 2. Marriages of Alcoholic Women

Study	A Percent with Broken Marriages	B Percent of Currently Married Whose Husbands Are Alcoholics or Problem Drinkers	C Percent of Sample with Either A or B
Berner and Salins (1952)		65	
Massot et al. (1956)		>50	
Lisansky (1957)			
Outpatients	27	35	47
Prison sample	38	56	59
Rosenbaum (1958)	35	50	67
Wood (1964)	30	7	35
Basquin and Osouf (1965)		30	
Kinsey (1966)	32	37	57
Jacob and Lavoie (1971)		59	
Rathod (1971)		50	
Rimmer (1972)		20	
Busch (1973)		20	
Rimmer (1974)		36	
Hoffman and Noem (1975)		74	
Browne-Mayers et al. (1976)	24	31	44
Dahlgren (1977)	20	51	48
Mulford (1977)	30	49	65

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Only one study reported patient's age at marriage and the number of years after marriage that problem drinking began (Murcia-Valcarcel 1969). In this sample of 103 women, 84 were married (divorce was not an option in Spain). The median age at the start of treatment was about 42, the age at marriage was about 24. In 97 percent of the married cases, the onset of alcoholism was between 5 and 20 years after marriage.

A great deal more information is needed on this topic if we are to unravel questions of stress, influence, and personality. In addition to length of marriage and age of onset, there are such questions as whether the husband really is alcoholic (the data are mostly based on reports by the patients), whether he was alcoholic at the time of marriage, and whether the wife was alcoholic before marriage, in addition to more complex aspects of the relationship. Clearly, this field of inquiry deserves attention.

In addition to the high proportion of alcoholism in husbands, another striking sign of the unsatisfactory marital experience is the high rate of divorce. Of eight studies summarized by Schuckit and Morrissey (1976), only one showed less than 30 percent broken marriages; most of them showed a rate of over 40 percent. The rates appear to vary with socioeconomic status, but considering how much higher they are in all cases than the rates in the general populations, it is remarkable that this area has been explored so little.

Some have suggested that there is a cultural bias in the attitude of lay and professional observers which makes them more interested in the role of wives than that of husbands in the patient's alcoholism (Jacob et al. 1978; Lindbeck 1972). There have been many studies purporting to show the complicity of the wife in the husband's alcoholic process (for a review of studies of wives see Edwards 1973), but the husband's complicity has been a less attractive subject. In the analysis of contrasting images of wives and of husbands of alcoholics, a majority of the wives were depicted as blameworthy, while most of the husbands were to be pitied. This bias is not absent from the professional literature, where at least one author dismissed the influence of the alcoholic husband with the words: "These alcoholic ladies who had alcoholic husbands had a competitive, spiteful attitude: 'What's sauce for the gander is sauce for the goose'" (Sclare 1975, p. 135).

It may be that because the woman is the "internal" or "expressive" expert, more responsibility for the marriage is attributed to her. Evidence for a double standard among college students in the assignments of responsibility for marital conflict was found by Kleinke (1977). The double standard in responsibility assignment was quite marked in the results of an analysis of manuals for the treatment of sexual dysfunction (Peterson and Peterson 1973).

Sex Role Conflict

Women's role, regarded either as a social or a psychological phenomenon, forms a natural topic of interest when considering

drunkenness and alcoholism. For one thing, the rate of both of these behavior patterns is so much lower for women than for men that questions naturally arise: What is it about women that makes them less likely than men to get drunk? Are alcoholic women somehow less feminine than nonalcoholic women? Another stimulus to such questions is the alleged increase in the rate of alcoholism in women and the acceleration of political activity and of talk in the media about women's rights to equality. In some quarters, it is even said that alcoholism is the price women pay for emancipation (Fraser 1973; Kenyon 1972; Massot et al. 1956). Such speculations are, of course, going rather far from available data either on the progress of emancipation or on the number of alcoholic women. How much change there has been, in which aspects of sex roles, and over what period of time is by no means clear, and whether or not there has been an increase in alcoholism among women is also a disputed point.

Sex Roles and Psychological Femininity

Conflict about sex roles, due perhaps to changing (and conflicting) expectations, has been approached in many studies by means of psychological tests of femininity administered to alcoholic and problem-drinking women. Presumably, the sex role conflict (sometimes called confusion, incongruence, or inadequacy) is a *stress* leading to alcoholism by way of a period of heavy intoxication. Various concepts and scales of masculinity and femininity have been used. A few of these studies will be described in some detail because, although their conclusions are often cited, the defects in their methods have not been scrutinized enough.

In a study of 34 alcoholic women, Belfer et al. (1971) found no difference in femininity scale scores for a normative population, as measured by the California Personality Inventory. However, 58 percent of the alcoholic women related their drinking to their menstrual cycle. The authors suggested that this may indicate a subtle nonacceptance of the feminine role.

The scores of 56 hospitalized female alcoholics were compared with 56 acquaintances of the author on the Terman-Miles M-F test, exercise 5 (femininity of interests and preferences) and exercise 4 (emotionality). The alcoholics scored higher than the controls on emotionality (Parker 1972) but not on femininity of interests and preferences. The emotionality scale was thought to measure unconscious femininity.

Twenty-eight women in treatment for alcoholism were compared with 28 controls on four sex role measures. On two of these, the alcoholics were not different from the controls, on one they were more feminine, and on the fourth they were more masculine (Wilsnack 1973). The one

on which they were more masculine consisted of a drawing completion test assumed to measure unconscious masculinity and femininity.

Using the Edwards Personal Preference Schedule, researchers compared 20 alcoholic women and 20 alcoholic men at an outpatient clinic with each other and with normative groups (established by Edwards in 1959). It was found that, on the whole, alcoholic women were no less feminine than "normal" women, although on 2 of the 16 "preference" scores they deviated slightly in the masculine direction, and on 1 in the feminine direction (Scott and Manaugh 1976). Out of a number of tests given, the odds are that at least one of them will indicate a dimension on which alcoholic women are more or less like men than "normal" women.

Scida and Vannicelli (1979) compared 24 alcoholic patients with 68 psychology students and 9 nonstudent volunteers on various measures of femininity and of sex role conflict. The findings were thought to support the view that the discrepancy between how a woman sees herself and how she would like to see herself may be a general factor in alcoholism.

Clearly, these interpretations must be viewed with caution. The samples have been small and the controls inadequate. In one of the few studies with adequate samples—120 alcoholics, 118 treatment controls (nonalcoholic women in treatment for psychiatric problems), and 119 nonalcoholic normal women—no differences were found on measures of conscious preference and attitudes or of unconscious gender identity and femininity. There was a difference on the Bem Sex Role Inventory, the normal women being more masculine. Perhaps this is because the masculine end of the scale correlates with self-esteem (Bem 1977; Jones et al. 1978), which is not surprising, since masculinity, in this scale, is evidenced by endorsement, as self-description, of such terms as self-reliant, self-sufficient, strong personality, makes decisions easily.

Many studies in this area "assume there exists a relatively well defined set of behaviors which characterize the role played by women in American society" (Schuckit and Morrissey 1976, p. 16). Aside from the variations in the female role in different social classes and ethnic groups, which these authors mention, there is a more serious difficulty in studying sex role conflict. This is the difficulty posed by the confusion about *what* is normative or deviant, normal or pathological, traditional or modern, about women's roles. Cogent comments have been made elsewhere about the impossibility of satisfying contradictory expectations (Browne-Mayers et al. 1976; Sayers 1969, originally published in 1947) and about the cultural bias which labels so many desirable traits as "masculine" (de Beauvoir 1949).

For an example of unclear or contradictory sex role expectations, we may look at the woman who stands for conventional morality, representing a sort of socializing influence on a man who presumably needs her to restrain him. She may be criticized for emasculating him, but if she does not take a position of representing higher moral standards, she may be criticized for trying to "act like a man." Or, as Komarovsky

(1946) pointed out, "the precise obligation of a gainfully employed wife toward the support of the family is one such undefined situation" (p. 184).

While unclear or confusing expectations also exist for men and male sex roles, there is less tendency to assess men exclusively in terms of their sex roles. For example, more men than women engage in fist fights, but is it a failure of masculine identification not to punch people in the nose? More men than women go to work every day, but would it be a sign of being less masculine if a man said he wished he did not have to get up every morning? Yet, some measures of femininity include such items as liking to cook, dyeing one's hair, and wanting four rather than two children. Scores on "emotionality" provide another example. Not enough attention is being paid to subcultural variations in using a scale of emotionality. It is probably true that, on the average, women express most emotions more openly and more frequently than men (anger is an outstanding exception). That does not mean that those women who do not scream or burst into tears at relatively slight provocation are regarded as unfeminine. In a subculture that values the stiff upper lip, women still may be more likely to break down than men, but they can hardly be rated on this point in comparison with all other women or with men in general. It may be that the role of a woman is best expressed in terms of comparison with men in her immediate environment.

Researchers' lack of concern with the variability of social norms is perhaps shown in the frequent use of scales standardized 20 to 40 years ago (Franck and Rosen 1949; Gough 1956; Terman and Mile 1936) or the use of newer scales standardized exclusively on college students. That sex role stereotypes differ even between apparently similar groups was shown in an interesting study by Festinger and Bounds (1977). A test that had been standardized using undergraduates showed less sex role stereotyping by graduate social work students. When Festinger used different items from the same item pool, she found at least as much stereotyping among social work students.

Obviously, such considerations make this kind of assessment of femininity extremely complex, but that is the reality that must be dealt with. It seems that, 40 years after Terman found that femininity ratings of women ranged from highest for domestic servants to lowest for physicians and women in *Who's Who*, we continue to discover that more gainfully employed women than housewives have interests that are other than domestic, that more of them are self reliant, and that more of them are emotionally controlled. The concrete details of what is regarded as correct feminine behavior vary according to custom. Still, it may be useful to look for some general factor characterizing sex differences in function.

In a review of social science research dealing with gender roles (Hochschild 1973), four types of research perspectives were identified: individual psychology, normative roles, minority group status, and the politics of caste. Conspicuously absent from the perspectives in alcoholism research are the latter two, although it would seem that if we

are looking for some constant underlying characteristic of women's role, status inferiority is at least as striking a factor as the expressive versus instrumental dimension. The latter (based largely on Barry et al. 1957) has in any case been seriously challenged in its cross-cultural evidence by Aronoff and Crano (1975), who found that, in the cultures studied, 40 percent of women do "productive" (instrumental) work in addition to raising children.

The concept of status inferiority is particularly important when speaking of *acceptance* of the female role. The feminine functions in the home are not "separate but equal" (expressive versus instrumental). They are consistently downgraded. In a study of the rating system of the U.S. Department of Labor's *Dictionary of Occupational Titles* (Witt and Naherny 1975), the following examples may be seen: Foster mother has the lowest possible rating (for complexity)—slightly more highly rated is a person who feeds and waters horses. Homemaker is rated lower than dog pound attendant, midwife is lower than hotel clerk, and practical nurse is lower than "poultry offal man." Considering that young girls are trained to see being a wife and mother as their legitimate and worthy goal in life, it seems that there are contradictory messages in our culture as to whether women's functions are to be respected or despised.

Perhaps the approach of looking at categories or subtypes of women alcoholics, which has been so useful in sorting out the influence of depressive illness, would be helpful in the study of sex role. Various women have different sorts of conflicts with their social roles: women who want to be dependent, "expressive" housewives encounter different frustrations than women who want well-paying jobs, or older women whose children have left home.

A fruitful approach might be to look at the pathological extreme of the "masculine" and "feminine" stereotypical personalities. The relevance to alcoholism is particularly interesting because of the substantial body of work done by Winokur, Schuckit, and others referred to above on what has been called broad-spectrum disease.

If it is true that there is some genetic predisposition to psychiatric abnormality which is more likely to take the form of depression in women and of sociopathy in men, the differential training of boys and girls, and the subsequent training by society, would seem very relevant. Even if there is no genetic abnormality, these differences are of considerable interest. Norms are defined not only by what is ideal but also by what excesses are tolerated and what price is paid in conforming or overconforming to a stereotype. The conflict between stereotyped sex roles and ego maturity has been pointed out by Block (1973) and Johnson (1976), and the incongruence between sex role training and realistic social functions has been discussed by Komarovsky (1973).

The pathological extreme of the masculine role has to do with excessively self-centered, impulsive, aggressive behavior. Here there seems to be an inability to reconcile the demands of others with the

immediate wishes of the self. It can be seen as a defective reality orientation in a way, because of the inability to assess the environment in relation to the self. The pathological extreme of the feminine role may be seen as including excessive fears, helplessness, dependency, timidity, subordination of one's own needs to those of others, and turning of anger against the self. Interestingly enough, expressions of agreement with the pathological extremes of the female role are included in many measures of femininity (as shown in the correlation of femininity with neuroticism), whereas the corresponding pathological extremes of the male role are rarely included in measures of masculinity. Exceptions tend to be found in studies of groups that may be regarded as aspiring to full adult male status, but that are in some way disadvantaged: adolescents (Critchley and Gardner 1975; Zucker 1968), blacks (Benjamin 1976), Puerto Ricans (Abad and Suarez 1975).

It is rare to see an article with the term "men's sex role" in the title. Some authors discuss need for power or need for dependence, yet none speaks of confusion about or acceptance of the "man's sex role." In reality, this role is probably defined in contrast to the woman's. The "Macho Scale" (Villemez and Touhey 1977) is also of interest here, being entirely composed of items about deference relations between men and women.

There has been some discussion of the need for dependence as a reason for using alcohol. "According to this theory, people have a need to be taken care of, which in our society is usually encouraged in women but discouraged in men" (Schuckit and Morrissey 1976; see also Curlee 1968; Wanberg and Horn 1970). The concept of dependency needs seems oversimplified in this formulation and contributes to the confusion about sex roles. For dependency needs to be gratified, it is not enough to be merely helpless—one must also be taken care of. In our society, it would seem that men are at least as likely as women to find this type of gratification. This bias may arise in part from the male perspective on the home. From his point of view, home may be where he goes to relax, to be fed, and to find clean clothes—but this is hardly how the housewife sees it.

It is worthwhile to investigate small group research on sex roles from the point of view of influence and norm violation, when we consider possible influences on women to get drunk (Berger et al. 1972; Johnson 1976; Wahrman and Pugh 1974). A note on the disadvantages of stereotyped sex role is provided by Meeker and Weitzel-O'Neill's (1977) studies of group interactions, where it was found that, while groups of women had difficulty with a task because no one wanted to take the lead, groups of men had difficulty with the same task because everyone tried to take the lead.

A review of the epidemiology of sex differences in mental disorders found that rates for neuroses were higher among women in 28 out of 32

studies, and rates of personality disorder were higher for men in 22 out of 26 studies. "The important question then becomes, What is there in the endowments and experiences of men and women that pushes them in these different deviant directions?" (Dohrenwend and Dohrenwend 1976).

Sex Roles and Social Position

We now turn from psychological measures of femininity to studies of social position and its relation to heavy drinking and to alcoholism. If we assume traditional sex roles to mean that the man is earning money and that the woman is running the home (although this is not characteristic of the majority of families), then gainfully employed women would be regarded as functioning outside of traditional roles. Looking at clinical samples, we find a relatively high rate of employment among alcoholic women. Data from several studies, assembled by Schuckit and Morrissey (1976), are shown in table 3.

It may be that the higher rates of gainful employment shown in table 3 are merely reflections of other factors, for example, the high rate of divorce and separation for alcoholic women. This hypothesis remains to be tested. Even if it were so, being divorced *and* gainfully employed can be regarded as being just that much more of a departure from traditional roles as well as representing a vulnerability to heavy drinking both because of stress and because of contexts of sociability. In studying the problems of gainfully employed women, it is well to remember that the sex role conflict is probably easier to bear for women, as it is for men, if they receive money, recognition, and success. Housewives, whether that is what they always want to be or whether they long for something different, are more likely to find their situation more tolerable the more of those rewards they get. Similarly, gainfully employed women, whether they chose to enter, or were forced into, the labor market, are more likely to resolve whatever sex role conflicts they have if they are doing well at a fairly decent wage and do not meet with too much hostility and discrimination on the job (Hinsdale and Wok 1978). It is sometimes forgotten that the average wage for women is lower than that of men and that this difference has been increasing—women earned 63 percent of what men did in 1956, but only 56 percent in 1974 (Howe 1977).

Representative samples of the general population are available from national surveys, from which breakdowns by demographic variables can be made. In these studies, of course, problem drinking rather than

alcoholism is the dependent variable. Table 4 shows results from a January 1975 survey conducted by the Opinion Research Center. Johnson et al. (1977) reported the results as follows:

> Women who are divorced or unemployed regardless of other statuses (except being widowed) have the highest rates of both problem drinking and heavier drinking. A similar relationship obtained for men . . . . Married women who are employed have significantly higher rates of both problem and heavier drinking than either single working women or housewives. No similar relationship occurs for men, raising the distinct possibility that this type of nontraditional role for women leads to an increased risk of alcoholism . . . . It may be that women in such nontraditional roles are in an environment controlled by traditional male drinking norms to which they conform. Further research with more detailed psychological data is necessary to sort out these alternative explanations.

It is of considerable interest to compare these results with the rates of depressive symptoms in similar social categories. An interview survey done in Kansas City, Mo., and in Washington County, Md. (Radloff 1975), used the CES-D scale of depressive symptoms. Mean depression scores were shown by sex, employment, income, and education. Low income and low education were related to higher scores on the CES-D scale. In addition, "married women are consistently more depressed than married men, but this is not the case for the never-married and the widowed" (p. 264). Never-married men are *more* depressed than never-married women (Knupfer et al. 1966). There is also, in this remarkably thorough study, an analysis of depression scores by sex, marital status, happiness with marriage, and happiness with job. (Housewives also rated their work.) Results are reproduced in table 5.

Table 5 shows that, even when happiness ratings for job and marriage are held constant, housewives are significantly higher on the depressive score than married employed women. This suggests that, in order to account for higher rates of problem drinking in married employed women, it might be more useful to focus on opportunities for heavy drinking than on role conflict. There is a useful discussion in Radloff's article of the possible relationship between depression and social roles, which emphasizes the "learned helplessness" and the "anger turned inward" models of depression. A study along these lines would be most helpful in relation to alcoholism and problem drinking, although the sample would have to be at least four times as large to yield enough frequently intoxicated women.

Table 3. Rates of Employment Found Among Alcoholic Women

Study	N	Percent Employed	Percent of Female Population Employed During Nearest Census Year [1]
Curran (1937)			
Lower and lower middle class patients in Bellevue Hospital	50	56	27 (1940)
Van Amberg (1943)			
Middle and upper middle class State hospital patients	50	34	27 (1940)
Lisansky (1957)			
Middle class outpatients	46	61	31 (1950)
Prison women	37	62	31 (1950)
Strayer (1962)			
Lower middle and middle class patients			
White	187	28	35 (1960)
Black	18	56	35 (1960)
Kinsey (1966)			
Lower middle class state hospital patients	46	64	35 (1960)
Johnson et al. (1966)			
AA Members and private patients	35	71	43 (1970)
Horn and Wanberg (1971)			
State hospital patients	365	66[2]	43 (1970)
Bateman and Petersen (1972)			
State hospital patients	136	66	43 (1970)

Source: Adapted by permission from Schuckit, M.A., and Morrissey, E.R. Alcoholism in women: some clinical and social perspectives with an emphasis on possible subtypes. In: Greenblatt, M. and Schuckit, M., eds. Alcoholism Problems in Women and Children. New York: Grune and Stratton, 1976. Copyright, 1976, Grune and Stratton.

[1] From Filene 1974.

[2] This percentage includes women working and those who had been unemployed for less than 3 months.

Table 4. Women's Social Roles and Drinking Behavior

Social Role[1]	Percent of Drinkers With Problems	Drinkers' Percent of "Heavier" Drinking	Number of Drinkers[2]	Percent Drinkers[2]	Total *N*
Divorced or unemployed (except widowed)	32[3]	34[3]	(54)	39	(104)
Married and employed	18[3]	27[3]	(72)	49	(147)
Single and employed	7	15	(34)	61	(56)
Married, not in labor force	8	17	(232)	46	(506)
All widowed	3	13	(36)	20	(163)

SOURCE: Johnson 1977.

[1] Excludes 29 drinking women who were single and either were not in the labor force or had unknown employment status. Their combined problem rate was 21 percent.

[2] Excludes semiabstainers (those who drank one to six times a year), who were not asked questions about drinking problems.

[3] Statistically significant differences (0.05 level) from last three rates in the same column.

Table 5. Distributions and Mean Depression Score (CES-D): Sex/Occupation by Ratings of Happiness with Job and Marriage for Currently Married (Combined Sites, White Only)[1]

All Married Sex/Occupation by Rating of Marriage	Rating of job: Happy N	Happy X	Happy Percent	Unhappy N	Unhappy X	Unhappy Percent	Total N
Male workers							
Happy	401	5.75	62.5	173	8.48	26.9	642
Unhappy	22	9.14	3.4	46	11.70	7.2	
Female workers							
Happy	209	7.36	55.1	108	9.77	28.5	379
Unhappy	30	11.03	7.9(32	14.88	8.4		
Housewives							
Happy		275	8.27	66.9	89	12.43	28.5411
Unhappy		12	16.67	2.9	35	15.09	8.5

Source: Reproduced by permission from Radloff, L.S. Sex differences in depression. Sex Roles, 1(3): pp. 249-265, 1975. Copyright, 1975 Plenum Publishing Corporation.

Note: Analysis of variance:
Interactions, two-way all not significant, $p > 0.25$.
Interaction, sex-occupation by job by marriage, $p > 0.10$.
Sex-occupation, $P < 0.01$.
Pairwise contrasts, sex/occupation, all $p < 0.01$.
Happy-marriage, $P < 0.01$.
Happy-job, $P < 0.01$.

[1] Slight variations in numbers due to missing data.

To the extent that sex role conflict or just departure from traditional sex roles is conceptualized chiefly as a source of stress, its relation to heavy drinking and alcoholism is fairly remote. Most women who experience stress do not become alcoholics or even heavy drinkers. The intervening variable is the perception that heavy drinking is an important solution to stress. Nineteenth-century feminists were rebelling against traditional sex roles but were probably not especially heavy drinkers; in fact, many were abstainers. Aspects of social roles more *directly* related to promoting intoxication are perhaps more promising areas for research. Wilsnack (1978) suggested that drinking may be used as a symbolic statement of sex role style. One change in sex role style that has not been studied and that probably is related to a diminished reluctance to get drunk is the relaxation of expectations for sexual "purity" in women—possibly connected with the spread of contraceptive pills. This omission, together with neglect of the subject of status inferiority, means that we seem to have been avoiding questions of *power* and of *sexuality* in discussing women's roles, possibly because these are emotionally charged and controversial issues. Aside from these two factors, it would seem that what have been called the contextual variables—the opportunities and encouragement for drinking more than a little—deserve a good deal of attention from researchers.

Recommendations For Research

In general, this review has tried to show a need for more precise words, more well thought out concepts, and more critical attention to the meanings of the indexes employed. In the pursuit of these aims, researchers should frequently reflect on the real life situations in which the behavior and the attitudes being studied take place. Problems do not result from drinking but from drunkenness, and only if it is inappropriate or habitual or both. What is appropriate depends upon the situation and the beliefs of the actors in the scene.

It seems clear that there is no one type of personality, no one type of social role, that characterizes women problem drinkers and alcoholics. That is not to say that there is no point in looking for central tendencies, but it does appear that attempts at excessively broad generalizations might be abandoned in favor of studies focused on subtypes among female alcoholics and problem drinkers. If we learn more about their

specific problem situations and the place of intoxication in their lives, we might be able to go on from there to larger concepts and programs.

It is not possible to predict what areas of research will be most productive. In order to study drunkenness-promoting environments and stresses and their interactions, researchers could compare carefully selected subgroups of women, focusing on a certain age, social class, and marital status. This approach has been suggested by Blume (1976), Carrigan (1978), Curlee (1969), and Gomberg (1975). For example, two treatment samples, one low income and one high income, of women heads of families, aged 35-50, might be compared with two similar groups from the general population. Another subgroup of interest might be women with alcoholic husbands, since such women form a substantial portion of treatment samples. In this case there must be a good deal in the literature on wives of alcoholics that could provide useful ideas about the difference between wives of alcoholics who managed fairly well, who themselves became alcoholic, or who found other, less than happy, solutions. Important in the data to be collected would be an account of the woman's drinking history. Perhaps in her early youth she moved in a heavy-drinking environment.

Another subgroup of interest is women in the "empty nest" situation, who, in one treatment sample, represented more than one-fourth of the women (Curlee 1969). There are at least four groups to compare in approaching the further investigation of Curlee's exploratory study: women who are distressed by their new life situation, women who are not distressed, women who are alcoholic, and women who are not.

Thus, many of the questions raised by existing research findings seem to cry out for more extensive comparisons by social class, marital status, occupation, ages of children, education, race, and degree and type of prior psychiatric condition. If such comparisons are to be made, we need clinic samples of at least 1,000 women. The only way to get them would be to study a number of different institutions, coordinating methods. It might be possible instead to take past as well as present patients at one large institution, but this has the disadvantage that one gets a lower response rate from patients who have left, whereas those who are currently enrolled form an easy "captive" sample. Another possibility would be to make all existing data available for reanalysis according to the interests of different researchers. There seems to be a tendency to think too much in terms of new data collection when a great deal of material is available for new ways of looking at it.

As for "sex role" research, it appears to this reviewer that, for the time being, it would be desirable to concentrate on what women do, what they feel, and what in their environment promotes intoxication rather than focusing on their identity as females. The sex role concepts are too varied and confused; perhaps we must await further clarification from research devoted to such concepts before we can use them fruitfully in the study of drinking problems.

Coordination of efforts is also indicated for general population surveys. Nothing much can be done with 1, or even 5, percent of 500

women. There were, however, more than seven national surveys in the 1970s, totaling 10,000 respondents. Some of the questions were identical. At least the data on tape could be made available for reanalysis.

If population surveys could be coordinated so that we had perhaps 10,000 respondents, it might be possible to study that 1 or 2 percent of women who report in various surveys that they consider themselves to be alcoholics or recovered alcoholics, or that they have at some time sought treatment.

Another important area is the study of social worries about intoxication. Alcoholism and drinking problems are often defined as deviance, but there has been surprisingly little careful study of the variations in worries in different groups and for different situations, especially with regard to women. (An exception is Roizen [1972], but his careful analysis gives no data on women.) Tamerin et al. (1971), for example, presented some case history data suggesting that among some upper class women there was little disapproval of drunkenness so that they could drink heavily enough over long enough periods of time to develop serious physical damage without incurring much in the way of social sanctions.

Finally, there are a few technical recommendations concerning the presentation of research reports which would save the serious student a great deal of time and give the reader a better opportunity to evaluate results.

1. Scales, scores, and other instruments used should be presented in detail, because it is often difficult and time consuming to find the originals. If this is not possible, it might be helpful to create a handbook of instruments used in alcoholism research.
2. Reference lists and bibliographies should be organized alphabetically with the date of publication prominently displayed. References in the text should give the first author's name and the date. The use of numbers in the text and the listing of references by number add time and frustration to the work of the serious reader.
3. For most uses it would be helpful to present tabulations showing the percentage distribution of answers instead of, or in addition to, correlations, factor loadings, means, or other more sophisticated statistics.

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Chapter 2

Biological Consequences of Alcoholism and Alcohol-Related Problems Among Women

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Abstract

Recent evidence suggests that sex differences play an important role in both the etiology and the biomedical consequences of alcohol abuse. Evidence is reviewed which suggests that the associated morbidity and mortality (completed suicide, accidental death, and death resulting from cirrhosis of the liver) due to alcoholism and alcohol-related problems is greater among women than men. For example, studies completed in a number of countries now demonstrate that the alcoholic woman is more susceptible to developing cirrhosis of the liver in association with a lower level of daily alcohol consumption and following a shorter history of heavy drinking than her male counterpart. Further work is needed to determine the exact nature of the mechanisms involved (autoimmunity, endocrine, or other) in this increased risk in order that successful intervention can be implemented. Because of the previously meager efforts to study women alcoholics, further research is also needed to determine whether women may be at greater risk for developing cancers, cardiovascular disorders, brain damage, and other complications as a result of their excessive drinking.

Also, because of the comparatively minor efforts to study women in the past, evidence is currently lacking regarding etiological factors. For example, while it has been demonstrated through use of adoption studies that genetic factors play an important role in the development of alcoholism in men, the evidence is now inconclusive regarding alcoholism in women.

To plan effective prevention programs for women, better information is needed about the types, distribution, and correlates of women's alcohol problems. These include both the problems women experience as a result of their own alcohol use and the problems they experience as a result of others' drinking.

Introduction

It has long been assumed that biological factors associated with the causes and consequences of alcohol-related problems can be considered without taking sex into account. Recent evidence suggests, however, that the sexes differ in their risk of developing these problems. This should not be surprising in view of the extensive effects that male and female hormones have on other tissues besides the reproductive systems. In fact, undersecretion or oversecretion of sex hormones such as estrogens, progesterone, and testosterone play an important role in a variety of diseases. There is reason to believe that alcohol consumption profoundly affects the secretion of these hormones. Furthermore, it is known that the normal breakdown of hormones is impaired in livers damaged by chronic alcohol consumption.

It is estimated that there are at least 2 million female alcoholics in the United States, and there are many indications that the number is increasing. Given these concerns, there is considerable interest in the biological factors that may contribute to the development of alcoholism and alcohol-related problems in women.

This review discusses the prevalence of biomedical consequences of alcohol-related problems in men and women and examines biological factors that may explain why the sexes differ in their vulnerability to these problems. The topics reviewed include sex differences in morbidity and mortality rates, neuroendocrine changes, liver disorders, cardiovascular effects, and cancers. The discussion of biological vulnerability or etiological factors that vary by sex includes a review of the literature concerning genetic factors, prevalence of other drug use among women, depression, and personality factors. Finally, new directions for further research into the possible causes or consequences of alcoholism and alcohol-related problems in women are discussed.

Morbidity And Mortality

Although alcoholics have long been known to have an extremely high morbidity rate, data for comparing morbidity rates in male and female alcoholics have only recently become available.

Morbidity among alcoholic men and women has been studied by several Swedish investigators. Using employment records and records from insurance companies, investigators (Asma et al. 1971; Lokander 1962; Lundquist 1965) found that greater morbidity among alcoholic men caused them to be absent from work more often and to use their insurance benefits more. Other Swedish investigators demonstrated that alcoholic women also have increased morbidity (Dahlgren and Idestroem 1979; Medhus 1974; Pell and D'Alonzo 1973).

Using data from Swedish public health insurance societies, Medhus (1974) compared disability rates and frequency of sick days among 71 alcoholic women and 71 age-matched control women. The alcoholics were studied for a period lasting from 6 years before their first compulsory treatment by the Swedish Temperance Board until 4 years after. Five to 6 years prior to their first compulsory treatment, female alcoholics were only moderately deviant with respect to morbidity; thereafter the morbidity increased markedly up to the time of treatment, remaining elevated throughout the 4-year observation period following treatment.

Also using data from Swedish public health insurance societies, Dahlgren and Idestroem (1979) determined the frequency of insurance use by 66 female and 68 male alcoholics over a 15-year period. Morbidity data were obtained for the alcoholics before and after they received treatment for alcoholism, and comparisons were made by age and sex. Women and older patients had higher disability rates, more sick periods, and longer sicknesses during the 6 years before treatment, and their morbidity in these three areas remained elevated after treatment.

In a study completed at Toronto's Addiction Research Foundation, Ashley et al. (1977) compared physical disease profiles of 135 female and 736 male inpatient alcoholics of similar age, social class, and referral pattern. Although at the time of admission the women had been drinking excessively for fewer years than the men (an average of 14.1 years compared to 20.2 years), the prevalence of most diseases was similar in both sexes. However, the women had a higher than expected prevalence of anemia, as well as a significantly shorter average duration of excessive drinking before the first recorded occurrence of fatty liver, hypertension, obesity, anemia, malnutrition, gastrointestinal hemorrhage, or ulcers requiring surgery. These results suggest that the development of complications in relation to excessive drinking may be accelerated in women when compared to men.

Excessive death rates in alcoholics of both sexes were found in investigations in Sweden (Dahlgren and Myrhed 1977; Medhus 1975), Norway (Sundby 1967), Canada (Schmidt and Popham 1976), England (Nicholls et al. 1974), and the United States (Tashiro and Lipscomb 1963) (see table 1). While the death rate among male alcoholics has been reported to be 2 to 4 times greater than that of men in the general population, the death rate among alcoholic women is 2.7 to 7 times that of women in the general population. Direct comparison of alcoholic men and women with similar demographic characteristics confirms the notion that excess mortality is more pronounced among alcoholic women.

Table 1. Ratio of Observed to Expected Mortality by Sex

Reference	Sample Source	Sample Size	Observation Period	Source of Expected Value	Mortality Ratio
Brenner (1967)	U.S.A. Alcoholism treatment facilities	258 F 1,085 M 1954–1957)	7 years (identified	Age and Sex - Specific mortality, California	5.6 F 3.0 M
Schmidt and deLint (1972)	Canada Admission to alcoholism clinics	1,119 F 5,395 M 1951–1963)	2–14 years (identified	Age-specific mortality, Ontario	3.2 F 2.0 M
Pell and d 'Alonzo (1973)	U.S.A. Alcoholic employees (one industry)	57 842 M	F (identified 1964)	5 years class-matched controls	Age-, sex-, payroll-, 3.1 M
Lindelius et al. (1974)	Sweden Voluntary treatment	118 F 139 M	5–10 years (identified 1962–1966)	age-, sex-, and time-period-specific rates, Stockholm	4.0 F 2.0 M
Nicholls et al. (1974)	U.K. Alcoholism admissions to psychiatric hospitals	257 F 678 M 1953–1957)	10–15 years (identified	Age-specific rates, U.K.	2.7 F 3.1 M

Medhus (1975)	Sweden Compulsory treatment by Temperance Board	83 F 1961–1968)	5–12 years (identified Malmo	Age-, sex-, and time-period-specific rates,	7.0 F
Dahlgren and Myrhed (1977)	Sweden Treatment at Karolinska Hospital	100 F 100 M 1963–1969)	6–12 years (identified Stockholm	Age-, sex-, and time-period-specific rates,	5.6 F 3.0 M

Greater risk for alcoholic women is also evident when mortality by specific causes is examined (see table 2). Mortality from circulatory disorders is 1.7 to 3.0 times greater than normal in alcoholic men, but 1.9 to 10.0 times greater than normal in alcoholic women. For cirrhosis of the liver, the figures are: alcoholic males, 5.0-11.5; alcoholic females, 20.0-25.0. For accidents from all causes: alcoholic males, 2.0-15.2; alcoholic females, 10.0-70.0. Although it has previously been thought that women are at greater risk of attempted but uncompleted suicide, table 2 also shows that alcoholic women are at greater risk for completed suicide than alcoholic men. The mortality ratios for suicide are: men, 6.0-26.5; women, 8.7-20. Not enough data by sex are available to compare mortality from respiratory disorders and cancer of the head and neck.

The mortality ratios in tables 1 and 2 are specific as to age and sex; that is, they were determined by comparing the mortality rates in alcoholics in each sex with those of people of the same sex and age in the general population. Some investigators (Dahlgren and Myrhed 1977; Schmidt and deLint 1972) have argued that the excessive mortality of women alcoholics is at least partly attributable to the lower death rates of women in the general population. In other words, it is argued that these findings do not necessarily mean that mortality among female alcoholics is greater than among male alcoholics, but rather that the expected mortality is lower for females. For this reason, some investigators have calculated mortality ratios for women alcoholics on the basis of expected mortality in the male population. Using this method, Dahlgren and Myrhed (1977) found mortality from all causes to be about the same for male and female alcoholics as have Schmidt and deLint (1972), who used the same method and concluded that the ratios for general mortality in alcoholics are 2.0 for men and 3.2 for women.

Lower expected mortality for women in the general population does not appear to be a valid reason for dismissing women in the general population as the appropriate comparison group for assessing mortality ratios among alcoholic women. The most appropriate control group for determining mortality ratios is the one that matches the age and sex of the group being examined, and, ideally, the two groups should also be matched by socioeconomic status and ethnicity.

Suicide

The association between alcoholism and suicide has been well established with reported rates of 6-20 times that of the general population (Goodwin 1973). Conclusions regarding differences between the sexes in this regard are much less clear. Death by suicide is particularly difficult to assess since women in the general population have a higher rate of attempted suicide than men do (Bratfos 1971), while men have a higher rate of completed suicide than women do

Table 2. Mortality Ratio of Actual to Expected Mortality by Cause Among Alcoholics by Sex

Reference	Circulatory		Digestive System		Cirrhosis		Accidents		Suicide	
	F	M	F	M	F	M	F	M	F	M
Brenner (1967)	—	—	—	—	—	—	6.3	15.8	—	—
Schmidt and deLint (1972)	1.7	4.1	3.6	6.7	11.5	25.0	2.5	12.4	6.0	8.7
Lindelius et al. (1974)	—	—	—	—	—	— —	—	5.0	17.5	
Nichols et al. (1974)	1.7	1.9	3.8	7.8	—	—	15.2	18.6	26.5	18.4
Medhus (1975)	—	—	—	—	—	— —	70.0	—	30.0	
Dahlgren and Myrhed	3.0	10.0	3.0	—	5.0	20.0	2.0	10.0	7.0	20.0

(Gibbs et al. 1966). Among alcoholic women the incidence of suicide attempts clearly exceeds that for the female population as a whole (Curlee 1970; Rathod and Thomson 1971; Rimmer et al. 1971).

Curlee (1970) found attempted suicide rates of 1 percent for men and 11 percent for women in a sample of alcoholic patients' case histories, while Rimmer et al. (1971) found the rates to be 26 percent for male alcoholics and 44 percent for female alcoholics. Rathod and Thomson (1971) reported a similar excess of female attempters, 2.1 percent for males and 34 percent for females. A report based on official U.S. mortality statistics noted lower rates of both alcoholism and suicide among women (Rushing 1969). However, this investigation did not start with alcoholic samples to determine sex differences in suicides; therefore the sex with the highest rate of alcoholism (males) could be expected to have more suicides in terms of absolute number, though not necessarily in terms of mortality rate.

Recent data (Adelstein and Graham-White 1977) indicate that the rate of completed suicide (based on death certificates) among male alcoholics is 22 times the rate for males in the population, and among females 23 times the population rate. Also, it may be noted that in the series of alcoholic patients studied by Schmidt and deLint, excess suicide was similar (frequency of observed/frequency of expected = 6.02 for men and 8.69 for women). However, as mentioned previously, Schmidt and deLint used expected mortality rates for males to calculate these ratios, a somewhat questionable method. Given the lower rates of suicide among women in the general population, their data in fact suggest a greater excess of completed suicide among female alcoholics.

Also, as seen in table 2, two other studies indicate a preponderance of completed suicides among female alcoholics (Dahlgren and Myrhed 1977; Lindelius et al. 1974). The female mortality ratios are presented as the ratio of observed suicides compared to those expected for females in the general population, but even the more conservative approach of using the general male population to determine expected suicide rates for alcoholic women shows that their risk of completed suicide is at least equal to that of men.

Liver Disorders

An increasing incidence of alcohol-related liver disorders and associated mortality has been well documented in the United States (Kramer et al. 1968; Kuller et al. 1969; *U.S. Statistical Bulletin* 1977), Great Britain (Krasner et al. 1977; Morgan and Sherlock 1977), and Sweden (Hallen and Krook 1963; Hallen and Linne 1970).

Mortality from cirrhosis of the liver appears to have risen steadily in the United States over the past 10 years. The disease now accounts for approximately 33,000 deaths a year and ranks 7th among the leading causes of death in the United States, having moved up rapidly from 10th

place in 1969. Mortality rates from cirrhosis among white men and women in the general U.S. population and among Metropolitan Life Insurance Company's standard ordinary policyholders are available for the 10-year period between 1963 and 1973 (*U.S. Statistical Bulletin* 1977). During that time, age-adjusted death rates for while males in the general population increased 29 percent at all ages combined, while among white females the rates rose by 20 percent. Inspection of the data by age group reveals increases greater than 40 percent among men in the 25-44 age group and among women in the 55-64 age group.

Epidemiological surveys from all over the world indicate a direct relationship between per capita consumption of alcohol and the number of deaths from cirrhosis (Lelbach et al. 1974; Williams and Davis 1976). Other variables that can be expected to affect cirrhosis rates are drinking history (length and pattern), socioeconomic class, age, and sex. Not all studies that present data by sex include information on these other variables, and some of the variation in prevalence rates in the studies reviewed may be due to these unreported characteristics.

Spain (1945) was the first to observe that more women than men developed portal cirrhosis associated with heavy drinking. Also the women in this study died at an earlier age (average: 48.6 years) than the men (average: 56.3 years). Since then, several studies have indicated sex differences in the incidence of hepatitis and cirrhosis of the liver. The investigators used a variety of methods to determine the prevalence of liver disease in the populations they examined, including large-scale autopsy studies (Hallen and Krook 1963; Viel et al. 1968), analysis of death certificates confirmed by a medical examiner (Kramer et al. 1968; Kuller et al. 1969), followup studies of patients who had liver biopsies (Krasner et al. 1977; Lischner et al. 1971; Mikkelsen et al. 1968), or both autopsy and biopsy analysis (Phillips and Davidson 1954; Wilkinson et al. 1969).

In addition to variations in method, various types of samples have been used to determine cases. Looking only at samples of cirrhotic alcoholic patients, it would appear that more men than women are affected with liver disorders, in ratios of approximately 1.6:1 (Hallen and Krook 1963; Hallen and Linne 1970) or 2.7:1 (Krasner et al. 1977). However, the relative risk for liver disorders in male and female alcoholics cannot be determined in studies of this type, because in any population fewer women than men are alcoholic. A better way to calculate the relative risk of liver disorders in male and female alcoholics is to determine the prevalence of liver disorders in each sex separately.

Using this strategy, Wilkinson et al. (1969) studied 800 alcoholics (663 men and 137 women) in Melbourne, Australia. They found that the 77 cases of alcoholic cirrhosis in this group represented 16 percent of the women and 8 percent of the men. The women with cirrhosis had shorter histories of excessive drinking than the men (13 years versus 20 years). Similar excess risk for women was found in other studies that used this approach. Viel et al. (1968) studied 1,079 male and 269

female Chilean alcoholics and found more than twice the rate of cirrhosis among the women than among the men (29 percent compared to 11 percent). Lischner et al. (1971) found the risk of hepatitis in alcoholic women was double that in alcoholic men.

Recent liver biopsy data confirm these observations. Krasner et al. (1977) studied 293 cases of alcoholic liver disease by this method and found significantly higher rates of central sclerosing hyaline necrosis of the liver in the women.

Another recent study (Morgan and Sherlock 1977) showed that the incidence of chronic advanced liver disease (hepatitis with or without cirrhosis) in alcoholics was significantly higher among women (86 percent) than among men (65 percent). Analysis of the socioeconomic status of the patients revealed that more than half were in the professional and managerial classes. This is a particularly informative finding since membership in higher socioeconomic classes can be expected to be advantageous in terms of adequate nutrition and greater access to the health care system. While more women than men appear to be affected by liver disorders, the Morgan and Sherlock data suggest that the difference may be smaller among patients in higher socioeconomic classes.

These data are noteworthy in view of reported trends in the incidence of cirrhosis mortality over the past 20 years, which show that increases have been greatest among black women. Kramer et al. (1968) analyzed death certificates and found a 260 percent increase in cirrhosis mortality among black women between 1957 and 1966.

A number of theories have been advanced to explain the observed sex differences in liver pathology, including differences in drinking pattern, possible adverse effects of estrogen on liver function, and possible differences in autoimmunity.

Steady drinking, which may be more destructive to the liver than binge drinking, is seen more often in women than in men (Wilkinson et al. 1969). Also, cirrhosis in women is associated with lower levels of alcohol intake (Krasner et al. 1977; Pequignot et al. 1974) and a shorter duration of excessive drinking (Galambos et al. 1972; Lelbach et al. 1974; Wilkinson et al. 1969).

The effects of estrogen on liver functioning are well known and have been reviewed by Galambos et al. (1972). Galambos has noted that estrogen administration can impair liver function in the absence of liver disease and may worsen liver function when active liver disease is present. The role of estrogen in the increased morbidity and mortality from liver disorders among alcoholic women needs further investigation.

The immunological differences between female and male alcoholics with liver disorders also appear worthy of increased study. In their survey of 293 patients with alcoholic liver disease, Krasner and colleagues (1977) found that women, particularly those under the age of 45, had a significantly higher incidence of alcoholic hepatitis and cirrhosis than men. Also, autoantibodies were more common among the women, suggesting that immune mechanisms may play a role in the

pathogenesis of alcoholic liver disease in women. Williams and Davis (1976) have also commented on the possible relationship between premenopausal autoimmunity in liver disorders and other inflammatory autoimmune mechanisms that subside after menopause.

In summary, female alcoholics appear to run a greater risk of developing liver disease at an earlier age, after a shorter period of heavy drinking, and presumably from a lower level of alcohol consumption. And once liver damage has occurred, women appear to have additional risk of mortality.

Neuroendocrine Effects

Studies have related excessive drinking by women to biological events in their lives. For example, one investigation found that more than half of the women attending an outpatient alcoholism clinic started drinking or increased their drinking shortly before menstruation (Belfer et al. 1971). Others have attempted to link menopause with excessive drinking in women (Curlee 1969). Still other studies have found a greater than expected rate of infertility, miscarriages, hysterectomies, and sexual dysfunction among women with alcohol-related problems (Kinsey 1968; Wilsnack 1972).

While many references have been made to the presumed relationship between problem drinking and the menstrual cycle, few empirical studies have been done, and all of them have relied on patients' reports rather than on hormone measurements to establish estrual phase. The link between menopause and problem drinking is equally tenuous for lack of empirical data. On the average, alcoholic women come to treatment in their forties (Schuckit et al. 1969; Winokur et al. 1970), which is also the age of menopause. However, available data suggest that women who enter treatment at that time have been drinking excessively since their thirties, well before the age of menopause.

A biological explanation may be warranted for clinical observations of excessive rates of infertility, miscarriage, hysterectomy, and sexual dysfunction among women with alcohol-related problems. These changes may be a direct result of the toxic effects of alcohol on the hypothalamic-pituitary-gonadal axis. Recent studies of female rats indicated that chronic alcohol consumption results in reduced plasma levels of estrogen and progesterone and further indicated histological evidence of ovarian failure among the animals that chronically consumed ethanol (Van Thiel et al. 1978).

While the animal data suggest a direct toxic effect of ethanol on gonadal functioning in female rats, virtually nothing is known about gonadal functioning in alcoholic women. Recently, one team of researchers (McNamee et al. 1979) stated that prior to their own study there were apparently no reports in the literature on the effects of acute

alcohol intake on circulating gonadotrophin and gonadal steroid concentrations.

Except for one rather small investigation in France (Hugues et al. 1978), this reviewer found the same scarcity of studies in this area. The investigation was of hypothalamic-pituitary-gonadal functioning in menopausal women. Estradiol, follicle-stimulating hormone (FSH), and prolactin levels were measured in the women to establish baselines. They were then administered synthetic luteinizing hormone releasing hormone (LHRH) and thyrotropin releasing hormone (TRH). The procedure identified two subgroups among the women: those considered to be menopausal and those in menopausal transition. Although the small sample size (11 women) limits the conclusions that can be drawn, the results suggest a normal hypothalamic-pituitary-gonadal axis in postmenopausal women. However, both before and after administration of LHRH and FSH, plasma estradiol levels were lower in alcoholic women in menopausal transition than in the control group of nonalcoholic women of similar age.

In the other recent study, McNamee et al. (1979) investigated the effects of acute alcohol administration (2.8 mg per kg of body weight) in young nonalcoholic women. While the conclusions of this study are also limited by small sample size (8 women), the findings were essentially negative. Alcohol administration failed to reduce serum testosterone or increase serum luteinizing hormone. No consistent effects were found for progesterone, estradiol, or FSH.

These studies demonstrate how little is known about the effects of either acute or chronic alcohol administration on the hypothalamic-pituitary-gonadal axis in women. The available data also suggest caution in generalizing to women the effects that are found in men. Acute alcohol intake in normal men is associated with a sudden and transient reduction of plasma testosterone levels (Mendelson et al. 1977), whereas McNamee et al. found no effects on gonadotrophin or gonadal steroid concentrations in women. In addition, studies of male chronic alcoholics have documented the existence of gonadal dysfunction by the presence of greater than expected infertility rates, hypoandrogenization, and feminization (Van Thiel et al. 1974), whereas the Hugues study found no consistent differences between female alcoholics and controls in basal levels of estradiol, FSH, or prolactin.

Cardiovascular Disorders

A variety of possible risk factors for coronary heart disease have been investigated in epidemiological studies, including the sex of the individuals studied. Typically, these studies have used such measures as myocardial infarction and mortality as endpoints in the disease process. Mortality ratios for alcohol-related deaths from cardiovascular disorders indicate that women have at least the same risk as men (table

2). While sex-specific morbidity data appear to vary with the type of vascular disorder, mortality is typically reported for all cardiovascular disorders combined. Therefore, this review examines risk for selected cardiovascular disorders where data are available by sex—specifically, cardiomyopathy and atherosclerosis.

Cardiomyopathy refers to disease of the myocardium or middle layer of the heart, which consists of cardiac muscle. The condition, characterized by degeneration of cardiac muscle, is frequently found in alcoholics. Atherosclerosis is characterized by lipid deposits in the inner lining of large and medium-size blood vessels. The deposits are associated with fibrosis and calcification, which in severe cases can reduce the size of the arterial lumen and predispose the individual to coronary thrombosis. The resulting ischemic manifestations include angina pectoris and myocardial infarction, strokes, and other complications.

Cardiomyopathy

Data on cardiomyopathy associated with alcoholism have consistently indicated that more males than females are affected (Regan 1973), although this may simply reflect the greater incidence of alcoholism among males. Preclinical abnormalities of cardiac function have also been described for male alcoholics (Spodick et al. 1972). Much less is known about possible preclinical abnormalities in alcoholic women.

One investigation of 22 male and 14 female alcoholics, who were matched for duration and quantity of drinking and were free of heart disease, hypertension, diabetes mellitus, obesity, and pulmonary disease, indicated that women may be less vulnerable to the effects of alcohol on the myocardium (Wu et al. 1976). After an abstinent period averaging 12 days, the alcoholics' electrocardiograms were obtained for comparison with those of 22 nonalcoholic controls who also were free of heart disease. On the basis of systolic time intervals (spacing of heartbeats), abnormal myocardial function was evident in the men but not in the women, suggesting that women are protected in some manner from the toxic effects of ethanol on the myocardium.

Atherosclerosis and Coronary Occlusions

Recent sex-specific data are available on coronary artery occlusion associated with alcohol intake and the presence of other risk factors (Anderson et al. 1977). While the sample did not specifically include alcoholics, alcohol intake was measured. Coronary arteriography—an accepted procedure for diagnosing coronary artery disease—was used on 1,635 male and 371 female heart patients. The degree of coronary occlusion revealed by the procedure was then related to quantitative measurements of blood cholesterol and triglyceride levels, diabetes, age, history of smoking, and alcohol intake. Coronary occlusion was rated on a scale of 0 (no occlusion) to 300 (all three main arteries

occluded). The patients were then divided into three groups corresponding to occlusion scores of 0-49, 50-149, and 150-300.

For men in each of these three occlusion groups, increases in age, cholesterol, triglycerides, smoking, and diabetes were found to have a positive correlation to the degree of occlusion. Similar associations were found in the women. However, men showed a *negative* correlation between alcohol intake and occlusion scores; that is, greater use of alcohol was associated with less occlusion of arteries. In contrast, the women patients did not show significantly different occlusion scores at different levels of alcohol consumption.

It should be noted that alcohol consumption was quite moderate in this group of patients. Even in the group that drank most, weekly ethanol consumption was only 201 ml, equivalent to four drinks of beverage alcohol a day. Also, among the women, those in the high consumption group (84 ml per week), or between one and two drinks, consumed less alcohol than the lowest consumption group among the men (114 ml per week). Therefore it is uncertain whether alcohol consumption fails to protect females because of a biological difference or because the average consumption among women in this study was so low. The possible protective effect of low levels of alcohol use was also observed in the Framingham Study, a large epidemiological investigation of risk factors associated with cardiovascular disorders (Kannel 1976).

Results of a number of studies suggest that atherosclerosis is less extensive and myocardial infarctions are less common in people with cirrhosis (Hirst et al. 1965; Ruebner et al. 1961). The reason has been assumed to be a protective effect of alcohol against atherosclerosis. One large postmortem study of atherosclerosis among males and females with cirrhosis examined the effect of alcohol on the risk of cardiovascular disorders (Vanacek 1976). The study involved analysis of 14,424 autopsies (6,903 males and 5,551 females). Liver cirrhosis was found in 507 of the subjects (317 males and 190 females). Although it cannot be assumed that all these cases of liver cirrhosis were alcohol-related, it can be assumed that a significant proportion were. For both males and females, an inverse relationship was found between liver cirrhosis and atherosclerosis (measured by raised lesions of the aorta and coronary arteries and the presence of myocardial lesions).

One more study of coronary disease in women should be mentioned. Talbott and colleagues (1977) examined the relationship between biological and psychosocial risk factors for sudden death in white women. Although the incidence rates of myocardial infarction and sudden death are 4-6 times higher for men between the ages of 45 and 64, these investigators identified a sample of women age 25-64 who died within 24 hours after the onset of symptoms, without prior history of heart disease. Multiple regression analysis revealed that a history of psychiatric illness, cigarette smoking, alcohol consumption, educational incongruity with spouse, and the number of children the women had

given birth to contributed significantly to the differences between the women who died suddenly and a control group of women residing in the same neighborhood. Of the group who died suddenly, 26.5 percent were heavy drinkers, compared to 6.3 percent of the control group.

In summary, few studies are available relating excessive alcohol consumption to risk of cardiovascular disorders among women. Preclinical abnormalities suggestive of alcoholic cardiomyopathy appear to be less common among alcoholic women than in alcoholic men, while risk for atherosclerosis may not be significantly worsened by drinking in either sex. It must be emphasized that data suggesting a protective effect of alcohol against atherosclerosis have come from studies of individuals who drink only moderately and are not alcoholic.

Further work is needed to determine the relative risk for particular cardiovascular disorders since mortality data that summarize risk for all such disorders combined suggest that excessive drinking is a risk factor.

Studies are also needed to examine the role of high density lipoprotein (HDL) in male and female alcoholics. Numerous studies have shown that patients with high plasma levels of HDL, a condition associated with drinking alcohol and exercising regularly, have a relatively low risk of developing coronary artery disease (Castelli et al. 1977*a, b*). Plasma HDL was found to be about 10 percent higher in people who consume the equivalent of one drink a day than in people who do not drink (Castelli et al. 1977*b*). Furthermore, in most surveys the average HDL cholesterol is 45 mg/dl in middle age men and 55 mg/dl in middle age women, and this 10 mg/dl difference is associated with a twofold difference in risk of developing coronary artery disease (Anonymous 1979).

These results suggest that women who drink may be at less risk of coronary artery disease than men who drink. However, these risk factors were determined among moderate drinkers, and it is unclear whether the effect of alcohol on HDL gives any protection to women or men who drink excessively or are alcoholic.

Cancers

The Third National Cancer Survey provided extensive data on the risk of various kinds of cancer associated with smoking and drinking. A variety of other factors were also taken into account, including socioeconomic status, education, age, and sex (Williams and Horm 1977). While there is a strong positive association between smoking and drinking, this study analyzed their separate contribution to cancer risk. Thus the risk of cancer in various sites could be assessed in drinkers of either sex without being confounded by the contribution of smoking. To measure the effect of drinking on the chances of getting a

particular kind of cancer, an index of alcohol consumption was used that incorporated daily consumption and duration of alcohol use.

In males, greater use of alcohol was strongly associated with increased risk of oral, pharyngeal, and laryngeal cancers. In females, greater use of alcohol was strongly associated with greater risk of cancer of lip and tongue, pharynx, and esophagus. Of particular importance is the fact that regression analysis of the survey data revealed that in both males and females cancer of the mouth and esophagus were related more to drinking than to smoking. The opposite was true for cancer of the larynx.

The relative importance of smoking and drinking as risk factors for cancer was examined in another retrospective study of 3,716 patients with histologically proven cancer of the lung, mouth, esophagus, or bladder (Wynder and Stellman 1977). Unlike the Williams and Horm study, this investigation used 18,000 controls who had no history of smoking-related cancers. The risk of mouth, larynx, and esophageal cancers among male smokers increased with the quantity of alcohol consumed. Among nonsmokers, however, alcohol consumption did not result in a significant increase in risk. A similar analysis was not presented for women. The results suggest that heavy alcohol usage interacts with smoking, so that alcohol may be considered to promote tobacco carcinogenesis.

Wynder and colleagues had previously suggested that the cancer-promoting effect of alcohol may be due to the nutritional deficiencies associated with alcoholism (Wynder 1976). But another interpretation might be that it is the direct effect on tissues exposed to both alcohol and tobacco. Williams and Horm (1977) have noted that the decreasing relative risk of cancers along the digestive tract parallels the progressive dilution of alcohol as it progresses through the tract and the portal circulation. The risk is highest in the oral cavity; lower in the larynx, esophagus, and liver; and lowest in the stomach, pancreas, colon, and rectum.

The role of alcohol and tobacco in multiple primary cancers of the upper digestive system, larynx, and lung was investigated in a prospective study by Schottenfeld et al. (1974). Survival rates 5 years after cancer was first diagnosed were significantly higher in women than in men, and the women were less likely to be heavy drinkers or heavy smokers than the men prior to diagnosis. Among patients with single primary cancers, 38 percent of the men had drunk seven or more drinks a day before cancer was diagnosed, compared to 14 percent of the women. Among patients with multiple primary cancers, 62 percent of the men and 43 percent of the women had drunk seven or more drinks daily.

It was found that both men and women reduced their drinking after cancer was diagnosed and in about the same proportion. Among patients with multiple primary cancers, 13 percent of the men and 14 percent of the women continued to drink heavily (seven or more drinks a day). Therefore the greater survival rate noted for women 5 years

after diagnosis of the index cancer was related most significantly to the amount of alcohol and tobacco exposure they had experienced before the diagnosis.

Since this study dealt with patients who already had cancer and were admitted to a cancer center for treatment, it does not provide cancer incidence rates (i.e., frequency of new cases) in populations of male and female alcoholics. Nevertheless, the data suggest that individuals who have seven or more drinks a day are at greater risk of getting cancer than those who drink less. Further, it is not possible to determine the relative vulnerability to development of carcinoma of the oral cavity, pharynx, or larynx in association with drinking by sex, due to the fact that women in this study were distinguished from the men by their less intensive exposure to tobacco and alcohol prior to the index cancer.

Effects On The Central Nervous System

The persistence of substance abuse as a social and medical problem has led to much debate about the relationship between abuse of psychoactive drugs and brain damage. Brain damage has been assessed with a variety of psychological tests (Goodwin and Hill 1975; Kleinknecht and Goldstein 1972; Smith et al. 1973), pneumoencephalography (Brewer and Perrett 1971; Haug 1968), and electroencephalography (Allen et al. 1971; Johnson et al. 1970). More recently, computerized transaxial tomography (CTT) has been used (Co et al. 1977; Epstein et al. 1977; Fox et al. 1976; Hill and Mikhael 1979*a, b*; Hill et al. 1979).

Unfortunately, few studies have used the controls necessary to conclude that an association exists. Most studies with psychological tests have ignored demographic variables that can alter the proportion of individuals diagnosed as impaired (West et al. 1977). Furthermore, in the studies where structural changes were assessed with CTT, subject selection has been based on persistent abnormal functioning, neurological signs, or other indicators warranting CTT scans (Epstein et al. 1977; Fox et al. 1976). Clearly, data have not been available to determine the rate of cerebral atrophy in a randomly selected population of substance abusers.

These issues have rarely been studied in women, although Epstein and colleagues (1977) did include comparison of CTT abnormalities in women in their study. As noted previously, the sampling bias of that study does not allow the actual risk of neuroanatomical impairment in alcoholics to be assessed. However, one well designed study of neuropsychological function in alcoholic women is available. Hatcher et al. (1977) found that alcoholic women, when compared to nonalcoholic women, show both spatial and verbal abstracting deficits, while previous reports on male alcoholics showed only spatial abstracting difficulties.

With this scarcity of available data on neuropsychological and neuroanatomical abnormalities in alcoholic women, it is inappropriate to make any conclusions about their risk of central nervous system dysfunction. However, available data on these abnormalities in male alcoholics suggest that further work on alcoholic women is warranted.

Biological Vulnerability For Alcohol Abuse

Genetic Factors in Alcohol Abuse

Among possible factors that may predispose women to alcoholism and alcohol-related problems is the presence of alcoholism in their families. Several investigators have noted an increased incidence of alcoholism among the first-degree relatives of female alcoholics (Curlee 1970; Schuckit et al. 1969; Winokur and Clayton 1968; Winokur et al. 1970). Evidence strongly suggesting a genetic predisposition to alcoholism has been obtained from family history, adoption, and twin studies, although twin studies have not been made on women.

Family history studies provide a strong suggestion of the genetic predisposition, though the evidence is not conclusive because the contribution of environmental influences is not easily separated from the genetic influence (e.g., one lives with an affected parent as well as receiving genes from that parent). Adoption studies can separate the genetic and environmental contributions, while family history studies can only provide evidence that familial transmission occurs. Clues concerning this transmission—whether they be genetic, familial-environmental, or nonfamilial environmental—can be determined by use of sophisticated tests of family history data such as the multifactorial model.

Cloninger et al. (1978) applied the multifactorial model to data on 365 relatives of male and female alcoholics to determine the mode of familial transmission. Analysis of the data revealed that female alcoholics did not have either a greater or smaller proportion of alcoholic male or female relatives than male alcoholics did. The male and female alcoholics differed in nonfamilial environmental factors, but not in familial ones. The environmental model tested in this analysis fit the data very well. The model assumes that differences in the prevalence of alcoholism seen in the general population by sex are due entirely to nonfamilial environmental factors, factors beyond the family that may be more cultural in nature (e.g., a greater proportion of one sex being exposed to risk, under greater stress, or more protected than the other sex).

On the basis of adoption studies, a genetic predisposition to alcoholism appears plausible for males. Goodwin et al. (1973) compared males born to parents with and without alcoholism and found a significantly higher rate of alcoholism in those who had alcoholic parents, even though both groups of offspring had been adopted and

raised by foster parents with similar psychiatric status. These results were not confirmed in a similar study of adopted daughters of biological parents with alcoholism (Goodwin et al. 1977). The negative result must be viewed cautiously, however, because few daughters in either group developed alcoholism.

Personality Variables

Personality variables may provide an additional clue to a possible biological vulnerability of women to become heavy drinkers or develop alcohol-related problems. Certain aspects of personality appear to have remarkable stability over the lifetime of an individual, suggesting a possible genetic influence. Thomas et al. (1968), in a study of children from birth to 10 years, found remarkable consistency in temperament across time. Undoubtedly, personality factors are acquired through a child's socialization process and could appropriately be considered a "psychosocial vulnerability." Our emphasis here, however, is on the antecedent personality factors that may be biological in origin.

Few longitudinal studies are available, and even fewer involve females who later develop alcohol problems. One exception is the Oakland Growth Study, a prospective study of male and female adolescents who were followed into adulthood. The data revealed different personality characteristics associated with drinking patterns in the men and women who later developed drinking problems. The adult male problem drinker was described as "undercontrolled, impulsive and rebellious as a youth" (Jones 1968). On the other hand, the women who later developed alcohol problems were described as "self-defeating, vulnerable, pessimistic, withdrawn, guilty, depressive, and prone to somatic complaints." Other traits in the women that predicted interpersonal difficulties were tendencies to be "sensitive to criticism, judgmental, distrustful, hostile, inexpressive, lacking in generosity, charm, social presence, and perceptiveness." Later, Jones (1971) described a core of traits in adult female problem drinkers that suggests a lack of adequate coping devices. However, some traits appear to be characteristic of both sexes. For example, males who later became problem drinkers were described as being less "socially perceptive, more sensitive to criticism, and vulnerable to threat" than moderate drinkers or abstainers.

Personality differences between cohorts in various drinking categories revealed further sex differences in this study. Personality traits among the men showed a definite ordinal trend from problem drinking through heavy, moderate, and light drinking to total abstinence. That is, men did not display unique attributes by drinking category but rather had more or less of a particular attribute than men in an adjacent category. Among women, however, distinctive personality traits were identified for each drinking category. In contrast to these findings, MacAndrew (1978) found that both male and female alcoholics show similar elevations of the psychopathic deviate (Pd) scale of the Minnesota Multiphasic

Personality Inventory (MMPI). However, only a rather small percentage of alcoholics (male and female) could be correctly distinguished from other psychiatric patients using cut-off scores on the Pd scale. This led MacAndrew to caution that "we are not justified. . .in concluding from this finding that alcoholics, either on the average or in the majority are, ipso facto, 'psychopathic deviates'."

The early work of Schuckit et al. (1969), which examined the characteristics of 70 female alcoholics, clearly indicates the futility of searching for the "typical alcoholic personality" among males or females who have already become alcoholic. Of the 70 alcoholic women, 19 showed preexisting affective disorders, 6 had preexisting sociopathy, 2 had preexisting schizophrenia, and 6 had hysteria. While prospective studies may give some insight into the types of personality structure that give rise to alcoholism, examination of individuals who are already alcoholic reveals great heterogeneity, suggesting that there are at least several types of alcoholic subgroups among both men and women alcoholics.

Depression and Affective Disorders

A number of studies have shown a greater than expected rate of excessive drinking among patients diagnosed as having affective disorder (Cassidy et al. 1957; Mayfield and Coleman 1968; Reich et al. 1974; Woodruff et al. 1973). The diagnosis of affective disorder requires the presence of depressed mood lasting more than 2 weeks, as well as a predetermined number of somatic and psychological symptoms (unipolar depression), or both depressed mood alternating with sustained euphoria (bipolar depression). Therefore, while depressed mood may accompany alcoholism, not all patients with depressed mood should be classified as having an affective disorder.

Although many alcoholics in treatment report symptoms of depression, it is often difficult to determine whether the depression is a correlate, consequence, or antecedent of their alcohol abuse. Affective disorder is often difficult to diagnose in alcoholic patients recently withdrawn from alcohol. Such patients frequently show depressive symptoms that abate when detoxification is completed. Though they may display depressed mood, these patients may never have had an affective disorder. If the depression persists beyond the detoxification period and somatic and psychological symptoms are present, the alcoholic may be considered to have affective disorder. Clinically, it is often useful to determine which of the two disorders is primary so appropriate treatment can be planned.

Among the approaches to this problem has been the use of the primary-secondary classification proposed by the St. Louis group (Guze et al. 1971; Robins and Guze 1972; Robins et al. 1972). The classification allows clinically observed heterogeneous types of depression to be analyzed. The primary-secondary distinction is based on whether the patient shows the presence of another psychiatric disorder

and notes the time of appearance of each disorder. The disorder that occurs first is considered the primary one.

Using this method of classification, Weissman et al. (1977) found secondary depression in as many as 59 percent of the alcoholics they examined. Winokur (1972) found a lower rate of 28 percent. Data presented in these studies were not broken down by sex, so it is not clear whether female alcoholics run a greater risk for secondary depression than male alcoholics do. However, two studies (Cadoret and Winokur 1972; Winokur et al. 1971) did examine the frequency of other secondary psychiatric syndromes among alcoholics by sex. In the first study, three major groups—primary alcoholics, alcoholics with affective disorder, and alcoholics with sociopathy—were identified. More male than female alcoholics were found among the primary alcoholics and alcoholics with sociopathy, while more women than men were found with alcoholism and secondary affective disorder (25 percent of women and 3 percent of men). In the second study, male and female alcoholics with and without secondary depression were identified by sex. In each sex, approximately 28 percent of the alcoholics were found to have a secondary depression.

It is important to note that the high rate of affective disorder among alcoholic patients, particularly women alcoholics, may be due to selection bias. Alcoholics with recurrent affective disorder may be more likely to require readmission for its treatment and may therefore be overrepresented in hospital samples. Also, the higher rate of coexisting affective disorder among female alcoholics could be due to the fact that treated rather than untreated samples of alcoholics are typically studied. Dahlgren (1978) found that women being treated for alcoholism report more previous psychiatric treatment than male alcoholics. The increased rate of psychiatric treatment may reflect a greater perceived urgency for obtaining relief from coexisting affective symptoms or may simply be an instance of the greater use of health care facilities by women. There is evidence that women more than men seek health care services for all types of illness (McC. Miller and Ingham 1976).

Drug Abuse Among Alcoholic Women

Misuse of prescription drugs appears to be a growing problem, particularly among individuals in middle to upper socioeconomic levels (Swanson et al. 1973). Misuse or deliberate abuse of prescription drugs is even more prevalent among multidrug users and alcoholics under the care of physicians, since the drugs are obtained from physicians by prescription. Jones and Helrich (1972) queried 16,000 physicians in private practice about their use of prescription drugs in treating chronic problem drinkers. Among the internists who responded, 62 percent regularly prescribed Librium, 51 percent regularly prescribed Valium,

and 21 percent regularly prescribed Miltown. All of these minor tranquilizers are frequently abused by problem drinkers.

Other studies confirm that women alcoholics are at high risk for abuse of other drugs. James (1975), in a survey of female Alcoholics Anonymous (AA) members, found that 35 percent of the women had abused drugs in the past. Nearly all the drugs had been prescribed by physicians. Similarly, Schuckit and Morrissey (1979) examined the records of 293 women in an alcoholic treatment center and found that 80 percent of them had obtained prescriptions for drugs with potential for abuse while they were abusing alcohol. About one-third of the women did abuse other drugs; 29 percent abused depressants, 27 percent abused stimulants, and 16 percent abused opiates. Male alcoholics were not studied.

There is some indication that female alcoholics abuse drugs more frequently than male alcoholics. Among alcoholics averaging 40 years of age at the time of admission (usually the first admission) to the Karolinska Hospital in Stockholm, Dahlgren and Myrhed (1977) found that 31 percent of the women reported drug abuse, compared to 14 percent of the men.

Women may also outnumber men among deliberate self-poisoning cases seen in emergency rooms. Ghodse (1977) conducted a prospective study of drug-related problems treated during a 1-month period in 62 emergency rooms in and around London, England, and identified 949 such cases. Nearly 75 percent of the patients were under 40, and women outnumbered men in all age groups. While the purpose of this report was to describe the frequency of suicide attempts or gestures, it underscores the greater availability of drugs to women. Furthermore, 10 percent of the sample was judged to have been drug-dependent before the self-poisoning incident. Two or more drugs were often used, but the most frequent combination was alcohol with another psychotropic drug.

Similar findings were reported by Patel et al. (1972) in a retrospective study of self-poisoning cases in Glasgow, Scotland. Blood alcohol levels were significantly elevated at the time of self-poisoning in 70 percent of men and 40 percent of the women in the sample studied. The smaller percentage of women may reflect the fact that alcoholism and alcohol abuse occur less frequently in women than in men.

A study in Oslo (Petersen and Brosstad 1977) found that 43 percent of the men and 13 percent of the women treated for drug overdose were alcoholics. About one-fourth of the women and half of the men had taken alcohol at the time of drug overdose. Females predominated only in the under-30 age group. However, there is some indication of more frequent alcohol-drug abuse overdose in elderly women. Examination of acute drug poisoning cases seen at a hospital in Dade County, Florida (Peterson and Thomas 1975), revealed that among elderly patients (mean age 59.6 years), women outnumber men (61 percent versus 38 percent). Alcohol in combination with other drugs was the reported cause of self-poisoning in 8.3 percent of the admissions in this age group and in 10.9 percent of the total admissions.

In summary, few studies are available comparing demographically matched samples of male and female alcoholics for occurrence of other drug abuse. The one study that made this comparison (Dahlgren and Myrhed 1977) indicates greater abuse of other drugs by women. Inferential evidence from studies of patients admitted for self-poisoning indicates that women are more likely than men to overdose on drugs and to use alcohol at the time of overdose. Finally, although Schuckit and Morrissey (1979) did not compare male and female alcoholics, their data indicate that approximately one-third of alcoholic women meet criteria for other drug abuse. The vast majority—90 percent—of the drug abusers abused prescription drugs; 10 percent abused illicit or "street" drugs. As Schuckit and Morrissey point out, these figures are alarming in view of the lack of evidence to suggest that anti-anxiety drugs, hypnotics, and stimulants are effective in treating alcoholics and drug abusers.

Conclusions

Until quite recently it has been assumed that the study of chronic effects of excessive alcohol consumption could be assessed without regard to the sex of the individual studied. Therefore, it has frequently been the case that women have not been included in these studies, too few included for meaningful statistical analysis, or all too often investigators have failed to report the sex of individuals examined.

Another problem which makes generalizations regarding the effects of chronic alcohol ingestion difficult is the tendency for investigators to label persons as "alcoholic" without regard to the multivariate nature of alcoholism and alcohol-related problems and particularly without regard to differences seen in men and women. Definitions of "alcoholism" or "alcohol-related problems" are often scanty or missing in the literature. Further, the quantity, frequency, and pattern of alcohol consumption of individuals studied are often ignored.

Given these limitations in much of the existing literature, an attempt has been made to review what is known about the biomedical consequences of chronic alcohol consumption with reference to the sex of the individuals considered. Overall, the conclusions which may be drawn from this review suggest that even though women may be less frequently identified as suffering from alcohol-related problems in the general population, among women who are so identified the risk for a variety of biomedical consequences are in many cases equal to, if not greater, than those observed in men.

Morbidity from all causes appears to be as prevalent among women as men who suffer from alcohol-related disorders. Further, there is some indication that morbidity may be accelerated among such women, that is, following a shorter duration of heavy drinking women present with equal risk of illness in association with alcohol consumption. One

notable example is the now demonstrated increased risk for liver disorders among alcoholic women seen at an earlier age, following a shorter duration of heavy drinking, and presumably in association with a lower level of alcohol consumption than among men.

Data from the Third National Cancer Survey as well as other large epidemiological surveys indicate that even when controlling for the effects of smoking, significantly greater risk for cancers of the head and neck are increased in both men and women as a function of the amount of alcohol consumed. Further, there is some indication that women may have greater risk for these cancers in association with alcohol consumption than do men.

The effects of alcohol consumption on cardiovascular functioning can be considered to be both positive and negative. While chronic and excessive alcohol ingestion appears to be related to the incidence of cardiomyopathy among alcoholics generally, conclusions cannot at present be drawn regarding the relative risk for alcohol associated cardiomyopathy by sex. Also, while there is some indication that moderate alcohol consumption may be associated with a reduction in coronary artery occlusion, women do not appear to be protected by alcohol consumption in this regard. Further, among white women who are victims of sudden death as a result of myocardial infarction heavy drinking was four times more likely than as it is among moderate or light drinkers.

Available data also suggests that alcohol-associated mortality takes its toll equally among women and men. In fact, if nonalcoholic women are used for comparison purposes, alcoholic women appear to run an even greater risk for premature death than do alcoholic men when compared with their nonalcoholic cohorts.

The present paper has also attempted to discuss a number of biological concomitants of alcohol-related problems which might be considered to be more etiological in nature than consequential and were therefore discussed as possible biological vulnerabilities for the development of alcohol-related problems. In this section evidence was presented demonstrating that women with alcohol problems more often than not have a family history of alcohol-related problems. However, family history studies provide only evidence that the alcoholism tends to run in families but does not specify whether the transmission is genetic, arises from familial environmental factors, or is due to environmental factors outside of the family. Sophisticated analysis of data currently available for families of male and female alcoholics indicate that the transmission of alcoholism within families of men or women who become alcoholic is quite similar. The relatively smaller likelihood that women in a given population will develop alcoholism appears to be due to factors which may be considered to be cultural and which may mitigate against heavy drinking among women. However, once cultural obstacles are overcome and women become heavy drinkers the likelihood of becoming alcoholic appears to be as great among women as men. Adoption studies provide the best evidence of a true genetic

basis for alcoholism. Unfortunately, adoption studies involving alcoholic women have included too few subjects to conclude at this point in time that a genetic vulnerability to alcoholism does or does not exist for women. Surely, a strong likelihood of the genetic component has been demonstrated using adoption studies for male alcoholics.

If one assumes that genetic factors play a role in the development of alcohol-related problems in women, then a search for these genetic factors are in order. The present discussion has emphasized the "trait" aspects of personality as opposed to the "state" aspects, noting the remarkable stability of some personality characteristics throughout the life span. Emphasis has been placed in this discussion upon the "trait" aspects of personality in order to raise the question as to whether or not certain genetically determined personality characteristics could provide the antecedent conditions for development of alcoholism. Few longitudinal prospective studies currently are available to answer this question. Studies of personalities of alcoholics after they became alcoholic are much less informative.

Much confusion exists around the concept of "depression" among alcoholics, particularly alcoholic women. Whereas depressed mood appears to be a common complaint of alcoholics, be they men or women, this state would appear to be somewhat related to the toxic effects of alcohol which abate after the individual is detoxified. In contrast, affective disorder is a constellation of symptoms which may have a recurring nature and which in some individuals may be antecedent to the development of alcohol-related problems. Because women appear to be more prone to develop affective disorders than are men, the presence of an affective disorder in conjunction with the alcohol-related problem is more likely to occur among women than men. The greater likelihood that women with alcohol-related problems may abuse other drugs is another factor which must be taken into account when considering the particular vulnerabilities which women have for developing alcohol-related problems.

New Directions For Further Research

The present review has demonstrated the urgent need to address the biomedical consequences of excessive use of alcohol in women alcoholics. This can be accomplished only by enlarging the sample size of proposed investigations to include women, and by specifying the sex of individuals in reports of findings.

In order that "safe" levels of alcohol consumption can be determined with respect to risk for particular medical complications more careful attention to control groups is needed. These should include normal drinking women without psychiatric problems as well as those with these problems. For example, increased morbidity and mortality have been reported for individuals with affective disorders. Additionally,

where possible, the individual's family history (e.g., cardiovascular disorders) should be noted as well as the quantity, frequency, and pattern of alcohol consumption of the individuals studied; possibly alcohol is more deleterious to individuals with a family history for the particular disorder in question.

Review of the existing literature has revealed a particular dearth of information in specific areas; areas where currently much more is known regarding men than women alcoholics. One of these is in the area of cognitive functioning. While it is well known that alcoholic men often suffer from some degree of cognitive dysfunction which may or may not entirely be reversible, few studies have been completed to date examining this question in women.

Another area is neuroendocrine functioning. In male alcoholics chronic alcohol consumption has been reported to result in an increased incidence of hypoandrogenization and feminization. Neuroendocrine changes resulting from chronic excessive use of alcohol undoubtedly occur among women though these changes are currently not well documented.

Future directions for study of possible vulnerability for developing alcohol problems in women should include large-scale prospective longitudinal designs where personality factors can be examined *before* women develop alcohol problems. A host of other biological factors could also be examined in this way including possible differences in the metabolism of alcohol among individuals who later become alcoholic. In addition to the value of conducting longitudinal studies, the adoption study method also remains a useful strategy for uncovering biological factors of a genetic nature which may predispose particular women to developing alcohol-related problems. This strategy is especially useful if the adoption study method is applied to samples that are sufficiently large to result in enough alcoholic women from which statistically meaningful conclusions can be drawn.

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Chapter 3

Prevention Of Alcohol Problems In Women

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Abstract

To plan effective prevention programs for women, better information is needed about the types, distribution, and correlates of women's alcohol problems. These include both the problems women experience as a result of their own alcohol use and the problems they experience as a result of others' drinking.

Some prevention strategies that may be useful in reducing women's alcohol problems address characteristics of the woman drinker herself (public education, mass communications). Some try to alter the distribution and availability of alcohol, and others attempt to change characteristics of the physical and social environment in which drinking occurs (altering women's drinking contexts and norms about women's drinking, establishing drinking-related laws and criminal sanctions, insulating drinking from potential harmful consequences). However, some strategies may be differentially effective for women and men, and some may need modification to better address special characteristics of women's drinking and drinking problems.

Some prevention programs target high-risk groups of women, such as daughters of alcoholics and women facing personal crises. Others choose a general population approach, believing that everyone is to some extent "at risk." Recent model prevention programs for women include a California public education campaign aimed at reducing heavy drinking in pregnancy and several programs that attempt to enhance natural community support systems for women at risk for alcohol problems.

Priorities for future research on prevention of alcohol problems in women include (1) careful evaluation of specific strategies for reducing specific alcohol-related problems in specific target groups of women, (2) research examining the strength of various social and cultural influences on women's drinking (for example, social norms, alcohol beverage advertising and media portrayals, drinking contexts), (3) evaluation of innovative prevention approaches for women in heavy drinking environments, and (4) increased attention to women as providers of prevention services.

Introduction

During the 1970s many social scientists have realized that alcoholism, like other health and social problems, cannot be eliminated simply by treating the casualties. Programs have been designed to prevent or minimize alcohol problems before they develop and to promote within the general population healthy attitudes and behaviors inconsistent with alcoholism (Alcohol, Drug Abuse, and Mental Health Administration, 1980). The *Third Special Report on Alcohol and Health* (U.S. Department of Health, Education, and Welfare 1978) presented a historical perspective on prevention of alcohol-related problems and described a number of specific prevention approaches.

The past decade has also seen increased public concern about alcohol problems in women and increased scientific attention to these problems. Women have been found to differ from men in certain aspects of the distribution, patterns, antecedents, and consequences of their alcohol-related problems (Greenblatt and Schuckit 1976; Israel et al. 1980; U.S. Department of Health, Education, and Welfare 1978). Several writers have discussed how these sex differences may have implications for how to treat women's and men's alcohol problems (Blume 1980; Homiller 1977; Sandmaier 1980; Trice and Beyer 1979). Less has been said about possible differences in the prevention strategies most important, appropriate, or effective for women as distinct from men.

This paper describes current theories and programs for preventing women's alcohol problems, considers special prevention needs of women, and identifies research gaps in current knowledge about women and prevention. The paper suggests that a need also exists for methods to prevent certain problems women experience as the result of others' drinking, such as rape and domestic violence. In addition, the author considers the potential role of women as *providers* of prevention services.

Women's Alcohol Problems: Implications For Prevention

Surveys of the general population indicate that both women and men experience many different types of alcohol problems—health impairment, job difficulties, drinking-related conflicts with family or friends, accidents and arrests, and others. Beyond clinical populations, these specific drinking-related problems show only modest interrelationships. Having one type of problem does not necessarily mean having another. Thus prevention efforts targeted to persons with certain types of alcohol problems will not automatically reach persons with other types, and programs designed to reduce one problem (for example, drinking-driving fatalities) may have little impact on others (cirrhosis of the liver or

job absenteeism) (Room 1975, 1979). Therefore, a crucial question is: Among women, what alcohol problems are we trying to prevent?

At present we know more about men's drinking-related problems than about women's. Some national surveys of drinking and drinking problems have studied only men (Cahalan and Roizen 1974; Cahalan and Room 1974). In a 1967 national survey that included both women and men (Cahalan 1970), men reported higher rates of all drinking problems measured, although a surprising 21 percent of women—compared to 43 percent of men—reported having had at least one drinking-related problem in the past 3 years. In eight surveys conducted between 1971 and 1976, men reported higher levels of most alcohol problems measured (Johnson et al. 1977). One exception was reported health problems: heavy-drinking women were three times as likely as heavy-drinking men to report that a doctor had told them that alcohol was injuring their health. Part of the disparity may be due to the fact that women see physicians more often than men do. The 1979 national survey results reported by Clark and Midanik (in press) also suggest higher rates of drinking problems among men than among women. However, the proportion of heavy-drinking women who reported drinking problems was found to sometimes exceed the rate for men who drink comparably.

How accurately women have reported their drinking-related problems in national surveys is open to question. Some writers have suggested that women may underreport drinking and drinking problems due to social disapproval of heavy drinking and drunkenness among women (Gomberg 1979; Knupfer 1964).

A second question about previous surveys is how adequately they have covered the full range of women's alcohol problems. Several of the drinking problems measured in earlier surveys have been traditionally masculine problems such as arrests, job problems, and financial difficulties. In addition, some types of drinking problems that may be particularly important for women have sometimes been overlooked. For example, most measures of job problems have not included questions about the effects of drinking on housewives' ability to carry out their housework. Also, measures of problems with spouse and relatives have generally not included specific questions about a woman's drinking-related problems in raising her children.

Women may experience some drinking-related problems not addressed at all in previous surveys. Heavy drinking in pregnancy, with resulting risks of alcohol-related birth defects, has received attention only in the past few years. Other alcohol problems experienced by women but overlooked in most drinking surveys include alcohol-related sexual difficulties; alcohol/drug interactions; negative psychological consequences, such as shame, guilt, and anxiety; and effects of maternal alcohol abuse on children's psychological and social development. Women may also experience some alcohol problems as the result of others' drinking rather than their own, for example, rape or other forms of physical and psychological abuse. In short, women

appear to experience a broader range of alcohol problems than previous general population surveys have measured.

The relatively small number of women problem drinkers found in general population surveys makes it difficult to evaluate possible differences in drinking problems among women varying in such characteristics as age, socioeconomic status, and ethnicity. Subgroups of women may develop different types of alcohol problems, with different developmental courses, requiring different prevention strategies. For example, strategies appropriate for young women of lower socioeconomic status whose heavy drinking develops gradually in the absence of any particular environmental stress may not be the best strategies for older women of higher socioeconomic status whose drinking becomes heavy only after they encounter a life crisis or stressful life transition (Gomberg 1979; Schuckit and Morrissey 1976; Wilsnack and Wilsnack 1978).

To plan comprehensive and effective prevention programs for women, we must know more about the specific types of alcohol abuse that need to be prevented or minimized. Better survey data are needed on the types and aspects of alcohol problems particularly important for women. These data should be obtained from samples large enough to allow analyses of drinking and drinking problems within a variety of subgroups of women drinkers.

Theoretical Models For Preventing Alcohol-Related Problems

When the problems to be addressed have been identified, a general prevention approach and specific prevention strategies must be selected. Four major theoretical frameworks have guided prevention efforts to date. The *proscriptive model* views any alcohol use as problematic and proposes abstinence as the only viable prevention strategy (Blane 1976*a*). This model was dominant during the Prohibition Era and is still influential within certain religious groups. Proponents of a *socialization model* believe that alcohol problems result from inaccurate information and faulty attitudes and values regarding alcohol. Prevention efforts based on this model attempt to increase knowledge and change attitudes and values to promote more responsible decisionmaking about alcohol use (Education Commission of the States 1978). The majority of prevention programs conducted in the post-Prohibition period have been based on a socialization model (Staulcup et al. 1979).

A third theoretical framework is the *control model*, based on research that indicates a direct relationship between the level of alcohol consumption in a population, the prevalence of heavy drinking, and the rates of certain alcohol-related problems (Bruun et al. 1975; Schmidt and Popham 1978). Proponents of the control model advocate stabilizing or reducing per capita consumption by restricting the

availability of alcohol. Proposed strategies include taxation, limitations on advertising, restrictions on alcohol distribution, and other regulatory measures.

A fourth theoretical framework for prevention is the *public health model* which proposes that three factors interact to produce health and social problems: the host, the agent, and the environment (Lilienfeld 1976; U.S. Department of Health, Education, and Welfare 1978). In alcohol problems, the *host* is the individual drinker, the *agent* is alcohol, and the *environment* is the physical and sociocultural setting in which drinking decisions are made and in which drinking occurs. Prevention efforts try to change the host's behavior, the exposure to the agent, and/or environmental influences so that alcohol-related problems will be reduced. In effect, the public health model is a more general schema which encompasses the preceding three models: the proscriptive and control models address primarily the agent alcohol, while the socialization model addresses characteristics of the host and the environment.

The public health model provides a framework for understanding approaches to preventing or minimizing women's alcohol problems. Some of the prevention strategies discussed below address primarily the individual woman drinker. Others focus on the availability of alcohol or characteristics of the drinking environment. The strategies described here are mainly primary prevention strategies, aimed at preventing alcohol problems from developing (Caplan 1964). Approaches to secondary prevention–early casefinding and treatment of persons with nonsevere alcohol problems–and tertiary prevention—treatment and rehabilitation of persons with severe alcohol problems—are discussed elsewhere in this volume.

The Host: Altering Individual Drinking Behavior

Since the repeal of Prohibition, most prevention efforts in this country have tried to reduce alcohol problems by changing the individual's drinking behavior through education and persuasion. Alcohol education programs have attempted to increase knowledge about alcohol, alter values and attitudes toward alcohol, address underlying personal causes of alcohol problems, and suggest alternatives to alcohol (Blane 1976*a*,*b*). Approaches have included youth education programs, public education and mass communication, and programs to enhance psychological and social coping skills.

Youth Education Programs

In the past 10 years a number of innovative youth education programs have been undertaken, many of them supported by the NIAAA Division of Prevention. These include school-based and out-of-school programs for elementary and secondary school youth, as well as programs for college student populations.

Although several youth education projects supported by NIAAA have focused specifically or primarily on boys, none has focused exclusively on girls. Special attention to young women may be justified in several areas. For example, adolescent girls and young women should receive information on risks of heavy drinking in pregnancy and on possible physiological sex differences in alcohol effects (Jones and Jones 1976; Hill in this monograph; Landesman-Dwyer in press). Daughters of alcoholic parents appear to be a particularly vulnerable group for the development of alcohol problems (Barnes et al. 1979; Winokur and Clayton 1968) and might be the target of special primary prevention efforts in the elementary and secondary school grades.

Mass Communications

Public Education. Public agencies and voluntary organizations invest considerable money and effort in mass media campaigns designed to change knowledge, attitudes, and behavior toward alcohol. Recent evidence from outside the alcohol field suggests that media campaigns of this sort may be most effective when combined with intensive interpersonal communication. In a Stanford University study of three California communities (Maccoby and Farquhar 1975; Meyer et al. 1980), a media campaign coupled with intensive face-to-face instruction was more successful than a media campaign alone in reducing high-risk behaviors such as smoking and high cholesterol diet among individuals at risk for coronary heart disease.

The State of California recently conducted an alcohol problems prevention demonstration project similar in some respects to the Stanford heart disease prevention study. One California community received a media campaign plus a variety of community education activities designed to promote self-regulated moderation in drinking. A second community received the media campaign only, and a third received no special prevention efforts. Results of annual community surveys are now being analyzed to determine the effects on knowledge, attitudes, and behavior of media only as compared with media combined with community education. Given the traditional importance of interpersonal relationships for women, face-to-face community education activities could prove particularly effective for them, although sex differences of this sort were not found in the Stanford heart disease prevention study.

Although alcohol education media campaigns aimed at women have increased in recent years, many campaigns still have a traditionally masculine orientation, for example, featuring well-known sports personalities or showing only male drinkers or problem drinkers (Blane and Hewitt 1977). Women may be less likely to identify with male figures and less likely to be influenced by such messages.

Simply targeting a public education campaign at women rather than men, however, may not ensure its success. As part of the prevention demonstration project described above, a recent California media

campaign was addressed to women aged 25 to 40. Using a "success model" with the slogan "Winners quit while they're ahead," the campaign showed women whose moderate drinking behavior expressed their own self-assurance and personal identity and resulted in admiration and imitation by peers. In an attempt to appeal to a wide range of women and be offensive to none, the women portrayed were neither traditional nor nontraditional, neither housewives nor working women, neither married nor single. For example, their style of dress was neither highly traditional nor highly nontraditional, and they were shown in social settings with friends rather than in home settings with family or in work settings with co-workers. Although quantitative data on the impact of the women's media campaign are not yet available, producers of the campaign were dissatisfied. They felt that in trying to appeal to all women, their characters became diluted, abstract, and "plastic," and probably diminished the campaign's effectiveness (Baynes 1979). Their experience suggests that it may be important to narrow female target audiences into smaller groups, for example, younger versus older women, or women with traditional versus nontraditional values and lifestyles. In this way alcohol prevention messages can be aimed more directly at the values and concerns of women in particular life situations and characters can be developed with whom women in various groups can identify more closely.

Alcohol Beverage Advertising. Funds spent on public education programs to prevent alcohol problems represent only a fraction of the funds spent on advertising by the alcohol beverage industry to promote alcohol consumption. In the mid-1970s the distilled spirits industry targeted women as one of five high priority submarkets (Gavin-Jobson Associates 1975). Although still low relative to that directed at men, alcohol advertising aimed at women (or at particular subgroups of women) has increased in recent years. For example, liquor and wine advertising in *Glamour* magazine increased from 3 pages annually in 1970 to 61 pages in 1974 and 82 pages in 1978 (Blane and Hewitt 1977; Lambert 1980). Some of this advertising promotes new products believed to have special appeal to women, such as "pop wines" and low calorie beers. The fact that women today are purchasing, if not consuming, a larger proportion of total liquor and wine sales than ever before has led to additional advertising targeted to women, including promotional displays in supermarkets and drug stores (Gavin-Jobson Associates 1975, 1976; Whitehead and Ferrence 1977).

It is not clear whether advertising can actually create new markets or whether it simply appeals to behavior patterns that have emerged for other reasons (Pittman and Lambert 1978). However, even if advertising has not been clearly demonstrated to cause increased alcohol consumption, it is possible that advertising can reinforce and maintain heavy drinking patterns (Gusfield 1976; Katzper et al. 1978), perhaps particularly among persons lacking social support systems and alternative role models (Leventhal 1964). Advertising of distilled spirits is currently not permitted on radio or television. Some supporters of

further limitations on alcohol beverage advertising have suggested that such limitations may especially benefit women by preventing or slowing the introduction of new products that might attract a disproportionate share of female consumers (Whitehead and Ferrence 1977). Given the lack of conclusive scientific evidence about the effects of advertising for either sex, such proposals should be supported by further research that attempts to clarify the actual impact of advertising on women's and men's alcohol consumption and alcohol problems. This research might also consider the potential impact on drinking and drinking problems of counter-advertising against undesirable patterns of alcohol use. Some authorities in the area of smoking believe that mass media counter-advertising campaigns against smoking in the 1960s did more to reduce smoking than did the mere absence of cigarette advertising (Foote 1977; Warner 1977).

Media Portrayal of Alcohol. In addition to alcohol advertising, the ways in which drinking is portrayed in popular literature, radio, television, and motion pictures may affect women's attitudes and values regarding alcohol as well as the self-images of women with alcohol problems. A prevention demonstration project supported by NIAAA has recently studied how the mass media portray alcohol and has then used the findings in an attempt to change undesirable portrayals (De Foe and Breed 1980). Among the project's findings were that alcohol is often used gratuitously, when another beverage could easily be substituted, and that drinking is often portrayed as glamorous and sophisticated. Little attention is paid to negative social reactions to heavy drinking or other problem consequences of alcohol misuse. Staff members of the alcohol and media project have shared their findings with media executives and writers. Suggestions from project staff on ways of portraying alcohol more realistically have been incorporated into a leading comic book series and into several recent prime-time television shows.

While women have not been a special focus of this media prevention project, the project has reported some data on women. A content analysis of drinking on prime-time television shows (Breed and De Foe 1981) found that most drinking (76 percent) was done by males, while most disapproval of drinking was shown by adult women. This "negative" message—that drinking is more acceptable or desirable for men than for women—contrasts with a "positive" message found in another study. An analysis of drinking in comic books found that alcohol was present in 54 percent of the stories in romance comic books, possibly suggesting to the predominantly female readers an association of drinking with glamour, romance, and sophistication (De Foe et al. 1978). Media "mixed messages" of this sort may reflect and reinforce women's ambivalence about alcohol and uncertainty about appropriate female drinking behavior, which some authorities believe can contribute to the development and continuation of alcohol problems (Wilkinson 1970).

A second project that attempts to change media portrayals is the Women's Communications Project of the Alcohol, Drug Abuse, and Mental Health Administration. This cooperative effort of NIAAA, the National Institute on Drug Abuse, and the National Institute of Mental Health has recently summarized research findings on alcohol, drug abuse, and mental health problems in women (Alcohol, Drug Abuse, and Mental Health Administration 1978). A particular focus is on how sex role stereotypes—traditional notions of how women and men should behave—may contribute to women's alcohol, drug abuse, and mental health problems and may shape the social reactions to these problems (Broverman et al. 1972; Guttentag and Salasin 1975; Wilsnack 1976). A kit containing brief research summaries has been provided to television and film writers and producers. The project's goal is to reduce sex role stereotypes and encourage more accurate and realistic media portrayals of women with alcohol, drug abuse, and mental health problems.

Like alcohol advertising, media portrayals are but one of a large number of possible influences on women's drinking. And, as with advertising, it is not clear whether media portrayals can create or change attitudes and behaviors or whether they simply reinforce existing attitudes and behaviors (Klapper 1972; O'Kelly and Bloomquist 1976). Further research may help to clarify the actual impact of media portrayals on women's attitudes, values, and drinking behavior. Research may also indicate the potential usefulness of prevention programs designed to present more consistent and realistic media portrayals.

Other Prevention Education Approaches

The education approaches discussed this far have attempted primarily to change drinking behavior by changing the individual's knowledge, attitudes, or values regarding alcohol use or nonuse. Other educational approaches attempt to change drinking behavior by altering underlying personal causes of excessive drinking or enhancing skills for coping with environmental causes. For example, if lack of assertiveness, low self-esteem, or high levels of environmental stress are believed to contribute to women's alcohol problems, prevention programs might include assertiveness training, activities designed to enhance self-esteem (e.g., exercise and physical fitness, women's support groups), and relaxation or stress management training (Irwin 1976; Sandmaier 1976). Other strategies used or proposed for women's prevention programs have included training in communication skills, interpersonal conflict resolution, problem solving techniques, and career and life planning. As Room (1976*b*) and others have noted, the incomplete nature of current knowledge about causes of alcohol problems requires that prevention approaches aimed at underlying causes be rigorously evaluated in terms of their effects on drinking and drinking problems.

Finally, some prevention education approaches address the individual's drinking behavior directly, without first trying to alter other contributing influences. Using principles derived from behavioral psychology (for example, Miller 1979), individuals can be taught specific drinking behaviors associated with moderate nonproblem drinking, such as taking sips rather than gulps, spacing drinks, and monitoring their own level of intoxication. Behavioral techniques have been used successfully in the *treatment* of chronic alcoholics, although these clinical samples have often been primarily or exclusively male (Pattison et al. 1977; Sobell and Sobell 1977). While the techniques may also be useful prevention strategies for both sexes, it will be important to evaluate possible sex differences in their effectiveness. For example, some research suggests that women's metabolism of alcohol may vary throughout the menstrual cycle (Jones and Jones 1976). If so, this might make it more difficult for women to monitor accurately their blood alcohol level as an aid to self-regulation of drinking behavior.

Women's Education Programs: Two Examples

Two NIAAA-funded education programs aimed specifically at women are a women's course developed by the National Center for Alcohol Education (NCAE) as part of its "Decisions and Drinking" series and a fetal alcohol syndrome prevention demonstration project currently being conducted by the California Women's Commission on Alcoholism.

The NCAE course, titled "Reflections in a Glass," is designed for adult women who are not experiencing drinking-related problems (National Center for Alcohol Education 1977). Its purpose is to provide information and learning experiences that will enable women to examine the role alcohol plays in their lives and then make personal decisions about drinking that will reflect respect for themselves and others. The course is designed to be taught by a lay facilitator, one of the members of the group taking the course. Course content includes basic information about alcohol; alcohol's role in American history and women's history; motivations for drinking, high-risk groups, and times of special vulnerability; and issues related to drinking and driving, drinking and entertaining, and drinking and other drug use. Special attention is given to the sexual double standard on alcohol use and the conflicting cultural messages women receive about alcohol. The "Reflections in a Glass" course has been made available by NCAE to women's groups throughout the country. Evaluation of the course indicates significant gains in knowledge about alcohol, although longer term effects on drinking behavior have not been assessed.

A second educational program for women has focused on one specific alcohol problem: heavy drinking in pregnancy (California Women's Commission on Alcoholism 1979). The purpose of this prevention demonstration project is to reduce the occurrence of the fetal alcohol syndrome—birth defects resulting from excessive maternal alcohol consumption during pregnancy—among women in Los Angeles

County. The target population includes 1.5 million women of childbearing age (15 to 44) and more than 300,000 females aged 10 to 14 who are approaching the childbearing period.

Components of the prevention demonstration project include a mass media campaign—television and radio spots and appearances, newspaper publicity, and brochures in English and Spanish; a community outreach program—presentations by staff and volunteers to schools, industries, and community groups; and a medical education component—presentations to physicians and other health services personnel. The project's success in reducing drinking during pregnancy will be evaluated by mail surveys of women who recently delivered babies in the target area. In addition to evaluating the project's overall effectiveness, the survey data will provide important information about the campaign's effectiveness with various subgroups of women within the target population.

The Agent: Controlling The Availability Of Alcohol

In contrast to prevention strategies attempting to change the attitudes, values, and behavior of the host, a second group of strategies attempts to reduce alcohol problems by regulating the availability of the agent. These strategies grow out of research conducted in France, Canada, and elsewhere that indicates a relationship between overall levels of alcohol consumption in a population, rates of heavy drinking, and the prevalence of serious health consequences such as cirrhosis of the liver (Bruun et al. 1975; Schmidt and Popham 1978). These studies have formed the basis of the "distribution of consumption" model of prevention, which proposes that alcohol problems can be reduced by reducing per capita alcohol consumption through legal and social controls. These would include taxation, price controls, and restrictions on sales and distribution.

Most studies on which the distribution of consumption model is based have tended to minimize differences in alcohol consumption patterns across various population subgroups, for example, between women and men. However, because different proportions of women and men are heavy drinkers, reducing or stabilizing per capita consumption may affect women's and men's drinking and drinking problems somewhat differently. Because a smaller proportion of women than men drink heavily, stabilization or reduction of per capita consumption within the general population may have less of an effect on heavy drinking among women than among men (Skog 1977). Sex differences of this sort might suggest the need for a more differentiated control policy. For example, a policy might be designed to reduce consumption by heavier drinking women while also reducing per capita consumption among the general population of men.

Although little empirical evidence is available, it is possible that certain regulatory measures may benefit women more than men. For example, since women on the average are less likely than men to engage in socially deviant and illegal behavior (Jessor and Jessor 1977), legal measures such as raising the minimum drinking age may have a relatively greater impact on the drinking behavior of young women than of young men (Whitehead and Ferrence 1977).

Although some controversy surrounds both the theoretical base and the practical implications of regulatory approaches to preventing alcohol problems (Parker and Harman 1978), prevention theorists and policy-makers have shown increased interest in such approaches in recent years. Rigorous research and evaluation of various control policies are needed as a basis for future change, including studies of taxation, price controls, distribution of sales and drinking outlets, changes in legal drinking age, alcohol beverage warning labels, and others. As one part of the comprehensive program of research and evaluation, some attention should be given to determining how various measures for regulating the availability of alcohol will affect drinking and drinking problems in different segments of the population, including their effects on women in comparison with men.

The Environment: Altering The Environment And Context Of Drinking

A third group of prevention strategies attempts to change the drinking environment in ways that will reduce alcohol consumption, minimize negative consequences of alcohol consumption, or both. Approaches in this group include changing drinking contexts, altering drinking norms and reactions to drinking behavior, establishing criminal sanctions against undesirable drinking behavior, insulating drinking from its potentially harmful consequences, and altering environmental causes of drinking and drinking problems.

Drinking Contexts

Drinking contexts and their relationships to drinking behavior have received increasing attention in recent years (Hanna 1979; Harford 1977; Schaefer 1980). Traditionally women have been less likely than men to drink in public settings associated with the heaviest drinking—bars and taverns (Clark 1977; Johnson et al. 1977). However, changes in women's roles may be bringing more women into public drinking settings, for example, for personal or job-related entertainment. Special promotions aimed at women, such as reduced-price drinks or "ladies' nights," may be attempts to capitalize on and strengthen this trend. Further research is needed to determine whether the social contexts of women's drinking are changing, whether these changes are affecting women's alcohol consumption, and whether more public drinking by

women is associated with more overt social consequences, such as accidents or arrests.

One contextual influence on a woman's drinking may be the number and sex of her drinking companions. There is some evidence that women drink more in the company of men, particularly in large mixed-sex groups, than they do in the company of other women (Harford et al. 1980; Rosenbluth et al. 1978). One writer (Ferrence 1980) has speculated that increased social interaction among women, including drinking in all-female groups, might result in lower levels of alcohol consumption. Increased understanding of contextual influences such as these might suggest ways of (1) altering drinking environments to reduce heavy consumption and minimize problem consequences, (2) influencing women's perceptions of appropriate or desirable drinking contexts (for example, encouraging or legitimizing all-women drinking groups), and (3) helping women resist the influence of heavy drinking settings (e.g., training in assertiveness or drink-refusal skills).

Prevention for Women in Heavy Drinking Environments

One important aspect of women's drinking contexts is the drinking behavior of their significant others, including husbands, living companions, or other family members. Living with a heavy drinker may increase a woman's risk for two categories of drinking-related problems. First, the woman may drink heavily herself and experience problems as a result. Surveys of drinkers in the general population and clinical studies of alcoholic women indicate that heavy drinking and problem drinking women are more likely than other women to be married to or living with a heavy drinking or problem drinking man (Johnson et al. 1977; Morrissey and Schuckit 1979; Mulford 1977). In some cases, heavy drinking women may seek out husbands or partners who will tolerate their drinking patterns. In other cases, women may become heavy drinkers as the result of exposure to and encouragement or pressure from a heavy drinking partner.

Second, women living with heavy drinking men may encounter problems that result from their partners' drinking. Drinking may serve as a trigger or excuse for violent action, such as wife abuse, child abuse, or rape (Hindman 1979; John 1978; Richardson and Campbell 1980). Given the larger proportion of men than women who are heavy drinkers, alcohol problems of this sort—resulting from a partner's heavy drinking—may be even more common among women than problems resulting from women's own drinking, yet these problems have been largely ignored by prevention programs to date.

Because they are at risk both for heavy drinking themselves and for problems resulting from their partners' drinking, women living with heavy drinking partners are an important target group for prevention. Strategies that might aid such women in escaping or insulating themselves from alcohol-related problems include (1) educating them about their at-risk status, alternatives to alcohol, and alternatives to remaining in their

current environment; (2) enhancing support systems available to them; and (3) strengthening coping skills such as assertiveness and drink-refusal skills, conflict resolution techniques, and methods of self-defense. In addition, of course, any prevention program that can reduce heavy drinking and drinking problems in men may in the long run help to prevent alcohol problems in their wives and partners.

Changing Drinking Norms and Beliefs About Alcohol

Another feature of women's drinking environments is the social norms that define acceptable and unacceptable drinking behavior and social responses to unacceptable behavior. As noted previously, social norms and beliefs regarding women's drinking may be less consistent than those for men. Heavy drinking and drunkenness have traditionally been negatively sanctioned for women, perhaps because they seem to threaten the successful performance of traditional wife-mother roles (Knupfer 1964). Yet, for many women drinking may also have positive connotations of sophistication, independence, maturity, and freedom from traditional sex role constraints (Curlee 1967; De Foe et al. 1978; Wilsnack and Wilsnack 1978).

Although some authorities believe that conflicting cultural messages of this sort may contribute to alcohol problems (Wilkinson 1970), little empirical research is available on the extent to which women receive "mixed messages" about alcohol or on how these messages affect women's drinking. Information is also limited about how social norms regarding women's drinking may differ across various subgroups of women, for example, women of differing social class or ethnic backgrounds. If future research shows that conflicting beliefs about alcohol are strongly related to alcohol problems in women, prevention programs might be developed to alter the sexual double standard of drinking, as well as programs designed to help women clarify and resist the conflicting messages they receive.

Changing Social Responses to Drinking and Drinking Problems

In addition to altering the social norms that define appropriate drinking behavior for women, secondary prevention programs can try to change social responses to women with actual or potential drinking problems. Traditionally the emphasis of such programs has been on increasing social reaction to drinking behavior. This has been done, for example, by training community caregivers to identify and refer "hidden alcoholics" or by building public support for harsher penalties for DWI (driving while intoxicated) offenders. However, it is possible that some alcohol problems might be reduced by decreasing the social reaction (Room 1975). For example, a traditionally oriented man who believes women should not drink might be persuaded to be more tolerant of his wife's occasional cocktail, thus reducing drinking-related marital conflict. Careful evaluation of such strategies is important, since short-term

gains from deemphasizing certain alcohol problems might be offset by long-term increases in other problems, such as health complications or alcohol dependence.

Many writers on women and alcohol have asserted that society reacts more harshly and punitively toward problem drinking women than toward problem drinking men, due to the greater social stigma of alcohol problems for women (Curlee 1967; Gomberg 1979; Sandmaier 1980). However, findings from several recent studies may challenge this assertion. One study (Stafford and Petway 1977) found that although both women and men problem drinkers were rated more negatively than nonproblem drinkers, there were no differences between the ratings of the problem drinking women and men. Other studies have found that adult women problem drinkers (Cahalan 1970) and female adolescent heavy drinkers (Donovan and Jessor 1978) reported fewer negative social consequences than their male counterparts. These findings suggest that although the woman problem drinker may experience considerable shame and guilt, the social reaction to her may be more one of denial and protection than of overt punishment and hostility. If so, prevention education programs might be designed to "sensitize" rather than "desensitize" the public to women's drinking problems, and to encourage early identification and confrontation of women with alcohol problems.

Establishing Criminal Sanctions Against Undesirable Drinking Behavior

Laws with criminal penalties attached have been passed to prevent or minimize alcohol problems such as public drunkenness and driving while intoxicated. In general these measures have had only limited impact on the prevalence of alcohol problems, although they may have important symbolic functions (Jones and Joscelyn 1978; McGuire and Peck 1977; Room 1976*a*).

Some evidence suggests that law enforcement personnel and court officials have been less likely to arrest and convict women than men for drinking-related misconduct (Argeriou and Paulino 1976; Blumenthal and Ross 1973). However, this sexual double standard may weaken with the use of instruments that measure blood alcohol concentrations objectively (Vingilis 1979). Persuading law enforcement and judicial officials to enforce drinking-related laws equally for women and men might increase the usefulness of legal sanctions as a form of prevention and early intervention for women. Some writers have suggested that intensified efforts to prevent driving while intoxicated—for example, by lowering the legal intoxication limit—might particularly affect women. This might be true because DWI rates among women, while still low relative to those of men, are increasing and because women's driving may be impaired at lower blood alcohol concentrations than men's (Ferrence 1980; Whitehead and Ferrence 1977).

Insulating Drinking from Its Potentially Harmful Consequences

Some prevention strategies do not attempt to change drinking behavior but rather try to minimize its adverse effects. Three ways in which drinking behavior can be "insulated" from potential problem consequences have been suggested (Room 1975): (1) physical separation (for example, zoning ordinances which prohibit taverns within certain distances of schools or churches); (2) cultural separation (informal agreements to tolerate behavior not tolerated elsewhere, such as on skid rows); and (3) temporal separation (for example, installing interlock devices which will not allow cars to operate when the driver is intoxicated, or providing beds for intoxicated guests after a party).

For many problem drinking women, particularly those of higher socioeconomic status and those not employed outside the home, drinking traditionally has been relatively well insulated, both physically—by drinking in the privacy of one's home—and temporally—by having time to sober up before other household members return home. Some data suggest that problem drinking women whose drinking is less well insulated—for example, those at lower socioeconomic levels—experience more negative social consequences of drinking (Schuckit and Morrissey 1976).

As increasing numbers of women enter the labor force and as women begin to drink in more visible public settings, strategies for insulating their drinking from potential adverse consequences may become increasingly important. As one example, if more women begin driving themselves home from drinking occasions, safety interlock systems to prevent driving while intoxicated or improved safety features to reduce injury—such as impact-inflatable airbags in cars or safer roadside environments—may assume added importance. This is particularly true since some evidence suggests that women who drive after drinking are at risk for accidents even at relatively low levels of alcohol consumption (Borkenstein et al. 1964; Carlson 1972). Research on innovative approaches to insulating drinking behavior may be particularly important in preventing the development of "new" alcohol problems related to the expanding roles and activities of women, such as drinking-related arrests, accidents, and fatalities.

Insulating strategies may also be helpful in preventing harmful effects of a woman's heavy drinking on others, such as her husband or partner, friends, or children. A family rehabilitation coordinator program in California (Davis and Hagood 1979) trains women paraprofessionals to enter the homes of recovering alcoholic women to help with household organization and to provide support for the woman and her family. Such programs may help to insulate family members from negative effects of the alcoholic woman's drinking behavior and thus help to prevent current drinking-related marital and family problems and future emotional and behavioral problems, for example, in the woman's children.

Altering Environmental Causes of Women's Alcohol Problems

Prevention strategies that attempt to change personal characteristics that may contribute to alcohol problems, such as low self-esteem or lack of assertiveness, were discussed earlier in this paper. Other strategies have been proposed to alter certain features of the social environment that are believed to be underlying causes of women's alcohol problems.

One feature of women's social environment believed by some to contribute to women's alcohol problems is societal demands for traditional sex role behavior (Parker 1972; Scida and Vannicelli 1979; Wilsnack 1976). If some women drink partly as the result of stress related to narrow and confining roles, then the women's movement and associated changes in women's roles may help to reduce women's alcohol problems. However, the women's movement might have other effects as well, for example, increased drinking due to more permissive drinking norms and more drinking opportunities, or increased drinking problems due to greater occupational stress and the demands of multiple roles (Johnson et al. 1977). The "natural experiment" presently occurring with regard to women's roles and opportunities offers a chance to learn more about the effects of sex role expectations and sex role performance on women's drinking and drinking problems. Studies which follow women longitudinally during this period of sex role change would be especially useful in clarifying what effect, if any, the weakening of sex role constraints and the adoption of new social roles will have in preventing or reducing women's alcohol problems.

As another way of creating more favorable environments for women, several writers have proposed that women's support groups or consciousness-raising groups could help to prevent alcohol problems in women (Sandmaier 1976). In addition to providing support and decreasing social isolation, women's groups are seen as potentially able to alter some of the personal conditions believed to contribute to women's alcohol problems, including low self-esteem and lack of self-actualization due to sex role constraints (Beckman 1978; Wilsnack 1976). Research is needed to test the effects of such groups on women's self-concepts, sex role flexibility, and self-actualization as well as their longer term effects on drinking and drinking problems.

In addition to possible benefits of including women's support groups in formal prevention or treatment programs, naturally occurring women's groups and support networks may play important roles in preventing alcohol problems in women. A neighborhood counselor program for women in Bloomington, Indiana (Spectrum 1981), attempted to prevent alcohol problems and related problems in women by strengthening natural support systems and enhancing skills of natural community caregivers. Women nominated as "natural helpers" were given 32 hours of training in basic listening and support skills; problem-solving techniques; identification of alcohol problems and problems possibly predisposing to alcohol abuse such as marital and family

problems, depression, and others; and community referral resources. Organizers of the program reported that the 40 women trained are providing support for women with a wide variety of difficulties, including alcohol problems, and have formed an informal women-helping-women network throughout the community. Programs like the neighborhood counselor project may function as both primary prevention—providing support and helping resolve problems that might otherwise result in problem drinking—and secondary prevention—early identification of alcohol problems that have already developed.

A program of support and alcohol education for women employed in a large Boston office building began as a series of "brown bag talks" on topics of interest to women but not directly alcohol-related (Masi 1978). Alcohol topics were gradually introduced, and the brown bag talks evolved into weekly noon discussion groups that offered friendship and support as well as alcohol education. Like the neighborhood counselor program, the brown bag support group program is inexpensive, adaptable to a variety of settings and target groups, and seems worthy of replication and evaluation as a potentially cost-effective primary prevention strategy for women.

Target Groups For Prevention: High-Risk Groups And Community Prevention

Some prevention programs attempt to identify groups of individuals at special risk for a disorder and then intervene in such a way as to reduce these individuals' risk. Although more research is needed to identify biological, psychological, and sociocultural risk factors for alcohol problems in women, some high-risk groups can be specified. These include daughters of alcoholic parents; women experiencing life crises or transitions, such as recently divorced or separated women; unemployed women—women unsuccessfully seeking work, not housewives; employed women, perhaps particularly married women employed outside the home (Johnson et al. 1977); lesbians; depressed women; female offenders and juvenile delinquents; wives or partners of heavy drinking men; women with gynecological problems; and pregnant heavy drinkers (Gomberg 1979, 1980; Johnson et al. 1977; Wilsnack 1981. Further, some groups of women may be at special risk for particular alcohol-related problems. For example, recently divorced or separated women may be at special risk for alcohol-related automobile accidents (McMurray 1968; Selzer and Vinokur 1974), lesbians may be at higher risk than heterosexual women for drinking-related job problems and driving accidents (Saghir et al. 1970), and depressed women may be at risk for problems related to alcohol-drug interactions. As suggested earlier, better survey data from a variety of subgroups of women will help to identify additional high-risk groups for specific alcohol-related problems.

A second approach to prevention argues that since many risk factors are unknown and since everyone is to some extent "at risk," prevention programing should be directed at entire populations or entire communities (Davis 1976). Further, since alcohol problems have multiple causes, community prevention efforts must be comprehensive in nature, employing a range of prevention strategies focusing on the individual, the agent, and the environment. Such programs can, if desired, be combined with special efforts for high-risk groups.

The NIAAA Division of Prevention has recently supported several community prevention projects designed to test the effects of varying combinations of prevention strategies. Although these programs do not focus specifically on women, they may provide useful information about possible sex differences in the effectiveness of community prevention strategies and about the role of women and women's groups as community change agents.

Alcohol Problems, Prevention Strategies, and Target Groups: A Matrix For Prevention Evaluation

As an aid in planning and evaluating prevention programs for women, it is possible to construct a prevention matrix like that in table 1.

The matrix contains a variety of prevention strategies that might be tested for preventing specific alcohol problems within particular target groups of women. It can help summarize knowledge about prevention strategies for specific alcohol problems and point to areas where further research and evaluation are needed.

Table 1 illustrates some possible prevention strategies that might be tested in relation to four types of alcohol problems in women: alcohol-related job problems; alcohol-related marital and family problems; drinking-driving accidents and fatalities; and heavy drinking in pregnancy. Prevention strategies are grouped according to whether they primarily address the host (the woman), the agent (alcohol), or the environment. Similar matrices could be developed for a variety of other alcohol problems, for example, acute and chronic health problems, alcohol-drug interactions, and household accidents and injuries.

Different prevention strategies may be required for addressing the same alcohol problem in different target groups of women. For example, a program that wished to reduce drinking-driving accidents among recently divorced or separated women might use different prevention strategies than a program aimed at the same problem in female high school students. For the divorced and separated, education regarding their at-risk status for alcohol abuse and driving accidents, training in alternative methods of stress reduction, and environmental strategies such as strengthening support systems and enforcing drinking-driving laws might be good strategies. For adolescent girls and young women, prevention strategies might include alcohol education in

Table1.A Matrix for Prevention Program Development and Evaluation: Possible Prevention Strategies for Four Alcohol Problems in Women

Prevention Strategy	Alcohol Problems			
	Alcohol-Related Job Absenteeism and Lowered Productivity	Alcohol-Related Marital and Family Problems	Drinking-Driving Accidents and Fatalities	Heavy Drinking in Pregnancy
The Host				
Youth Education	Alcohol education for Junior Achievement and career education clubs	Alcohol education in home economics and family living classes	Alcohol education in driver education classes	Alcohol education in health and family living classes
Public Education	Alcohol education for women intensive labor unions, for women's business and professional organizations	Alcohol education and parent education for PTAs, YWCAs, other groups Alcohol education, training in coping skills and alternatives for wives of heavy-drinking men Public education designed to weaken cultural associations between drinking and violence	Alcohol education and stress management training for high-risk groups of women (e.g., recently divorced or separated women)	Alcohol education and stress management training for pregnant women, for GYN patients in childbearing years
The Agent	Restricting hours of sale on work nights Zoning regulations restricting alcohol outlets in high-employment areas (e.g., near factories)	Zoning regulations restricting alcohol outlets in residential areas	Restricting sales during peak hours for accidents	Alcohol beverage warning labels regarding FAS risks

Table1. A Matrix for Prevention Program Development and Evaluation: Possible Prevention Strategies for Four Alcohol Problems in Women

Prevention Strategy	Alcohol Problems			
	Alcohol-Related Job Absenteeism and Lowered Productivity	Alcohol-Related Marital and Family Problems	Drinking-Driving Accidents and Fatalities	Heavy Drinking in Pregnancy
The Environment:				
Criminal Sanctions		Political action to ban corporal punishment for children Encouraging women to press charges in cases of domestic violence	Establishing more stringent DWI laws (e.g., lower limit for legal intoxication)	
Changing Social Responses to Women's Drinking and Drinking Problems	Educating managers and supervisors about risk factors and early signs of alcohol problems in women	Educating marriage and family counselors about heavy drinking as a cause or consequence of marital, sexual, and family dysfunction Educating police and social service personnel about relationships between alcohol and violence, and methods of intervention	Encouraging law enforcement and judicial personnel to enforce DWI laws equally for women and men	Educating health care personnel on risks of drinking in pregnancy, identification of at-risk women, and methods of intervention

Table1.A Matrix for Prevention Program Development and Evaluation: Possible Prevention Strategies for Four Alcohol Problems in Women

Prevention Strategy	Alcohol Problems			
	Alcohol-Related Job Absenteeism and Lowered Productivity	Alcohol-Related Marital and Family Problems	Drinking-Driving Accidents and Fatalities	Heavy Drinking in Pregnancy
Insulating Drinking from Potential Problem Consequences	More flexible working hours (e.g., permitting employees with Monday morning hangovers to start and finish work late rather than miss entire day)	Providing 'on-call' foster parents or crisis shelters for separation of family members (to prevent abuse which might result from or trigger excessive drinking) Providing in-home support (e.g., paraprofessional housekeeper/counselor) for families of problem drinking women	Car interlock devices, safety airbags, safer roadside environments Encouraging hosts and hostesses to offer transportation or over-night lodging to intoxicated guests	
Altering Environment Causes of Alcohol Problems	Developing women's support groups in the workplace Developing childcare facilities in or near the workplace for employed mothers Political action to improve employment opportunities and working conditions for women	Developing support networks for housewives, for new parents, for wives of heavy-drinking men Sponsoring a self-help group for child abusing parents, for spouse abusers Political action to expand supportive services for families under stress	Developing support networks for women at risk for heavy drinking and for driving accidents (e.g., recently divorced or separated women)	Developing support networks for expectant parents

driver education classes, changes in legal drinking age, and educational programs designed to mobilize adolescent peer pressure against driving while intoxicated.

Prevention research and evaluation projects are needed to test the effects of specific prevention strategies on specific alcohol problems in specific subgroups of women. This approach contrasts with simply evaluating how well given strategies work in reducing some global criterion, such as "alcohol abuse" or "problem drinking," for all women. The concept differs from finding the best strategy for one subgroup of women across alcohol problems or for one alcohol problem across subgroups of women. This "disaggregated" approach to prevention evaluation research will produce a systematic body of knowledge about the effectiveness of various prevention strategies which will permit future prevention programs to be targeted more precisely to the specific alcohol problems of identified subgroups of women.

While careful evaluation is critical to progress in prevention, evaluating prevention programs presents special difficulties and challenges. These include determining criteria for program success, finding adequate control or comparison groups, and measuring long-term effects that may not be realized within the time frame of the prevention project (Wilsnack 1980). The quality of prevention evaluation and the resulting contribution to knowledge about prevention might be increased by disseminating current evaluation knowledge and techniques in a nontechnical form to prevention planners and programers throughout the country. As part of this effort, prevention personnel might be encouraged to give some attention to possible sex differences in prevention needs and to report any sex differences in the effectiveness of prevention efforts. Finally, knowledge about prevention for both women and men would also be increased by the longterm support of a small number of projects, so that better data can be obtained on relationships between short-term changes in knowledge, attitudes, and drinking behavior and longer term changes in drinking and drinking problems.

Women As Providers Of Prevention Services

Women may have important roles as providers of prevention services for alcohol problems. Cahalan (1975) and others have spoken of the need for a grass roots social movement around the prevention of alcohol problems, a movement that would crystallize and reinforce moderate drinking norms through the use of person-to-person persuasion, modeling, and peer pressure. Women played a leadership role in the last social movement around alcohol—the temperance movement (Levine 1980; Sandmaier 1980). It is possible that women can again play a similar role in a movement to reduce or prevent alcohol problems.

One way of involving women in prevention activities would be to foster an alliance between the women's movement and the alcohol problems prevention "movement." Areas of possible mutual interest

include preventing various alcohol-related health problems in women; preventing alcohol-related rape, child abuse, and wife abuse; reducing fetal alcohol syndrome risks; and reducing associations between drinking and certain types of business activities that often exclude women—for example, heavy drinking "businessmen's lunches."

In addition to women's movement organizations, a variety of other women's organizations may have interests overlapping those of the alcohol problems prevention field. For example, women's labor unions or business and professional women's associations have a natural concern with alcohol-related job problems. Church women's organizations might have particular interest in reducing alcohol-related marital and family problems; community service organizations might be especially concerned with such community alcohol problems as drinking-driving accidents and alcohol and violence. If these women's organizations can be sensitized to the role of alcohol in the problems and issues with which they are most concerned, they could form a potentially powerful constituency for prevention.

Attempting to develop a women's prevention constituency of this sort, the National Clearinghouse for Alcohol Information (NCALI) has recently implemented a national prevention program for women's organizations (National Clearinghouse for Alcohol Information 1980). Whereas previous Federal outreach efforts to women's organizations have primarily tried to raise general awareness levels, the NCALI program has identified specific alcohol-related problems that are relevant to the mission and work of particular women's organizations. Kits featuring prevention project ideas targeted to these alcohol problems are being made available to national women's organizations. The women's prevention kit encourages organizations to evaluate the impact of the projects they implement and provides some simple nontechnical guidelines for program evaluation. Thus projects implemented may not only be of service to women in the organizations and communities involved but may also contribute to further knowledge about effective prevention strategies for women in general.

Women, Prevention, and Power: Networking and Voluntary Women's Organizations

To become effective providers of prevention services, women need the social, political, and economic power to implement needed change. Women traditionally have been underrepresented in decisionmaking about many social environmental influences on women's alcohol problems, for example, decisions about alcohol advertising and merchandising, legal restrictions, and allocations for prevention and treatment services. In addition, women have been underrepresented in decisionmaking about many general political and social issues that may indirectly affect women's alcohol consumption and alcohol problems. Thus, many writers on women and alcohol believe that prevention of alcohol problems in women must involve a commitment to social

change, including increased social and political power for women (Sandmaier 1980).

Networks of women and women's organizations that share information, resources, and support may be more successful than individual women or organizations in increasing women's impact on political and economic decisionmaking. In the alcohol field, the National Women's Congress on Alcohol and Drug Problems is a national network of voluntary State task forces formerly coordinated by the Women's Office of the National Council on Alcoholism. The Congress conducts a variety of informational, coordinating, and advocacy activities related to women and alcohol, including ongoing efforts to obtain State and Federal allocations for expanded treatment and prevention services for women.

Future Research Needs

Although research and writing on women and alcohol and on alcohol problems prevention have increased in recent years, relatively little specific attention has been given to preventing alcohol problems in women. A number of gaps in current knowledge about women and prevention have been identified in this paper. The following are areas in which research is particularly needed.

1. *Surveys of drinking and drinking problems among women in the general population.* To be effective, the surveys should use measures and procedures that are sensitive to the special characteristics of women's drinking, and samples that are large enough to allow analysis of subgroup differences in alcohol problems. Such surveys could gather considerable data important to prevention, including prevalence and correlates of specific alcohol problems in women, contexts of women's drinking, beliefs women hold about drinking, and social responses to women's drinking and drinking problems. Ideally such surveys would be longitudinal so that changes in women's drinking and drinking problems could be tracked over time, particularly as they relate to changes in women's roles and lifestyles.
2. *Research examining the strength of various social and cultural influences on women's drinking.* This should include analysis of social norms about women's drinking; alcohol beverage advertising and media portrayal of alcohol; social contexts of drinking; and the role of significant others in producing, maintaining, and preventing women's alcohol problems. Research findings could form the basis for prevention programs to reduce or alter undesirable social and cultural influences. For example, education programs could be developed to help women clarify inconsistent cultural messages about alcohol or to help prevent

heavy drinking and drinking problems among women in heavy drinking environments.

3. *Rigorously evaluated prevention demonstration projects that test innovative strategies for reducing specific alcohol problems within specified target groups of women.* Strategies tested should include not only efforts to alter the individual drinker but also those that address the distribution and availability of alcohol and characteristics of the physical and social environment.
4. *Carefully evaluated prevention demonstration projects designed to prevent or minimize alcohol problems that women experience as a result of others' drinking.* The problems addressed would include alcohol-related rape and domestic violence.
5. *Improved evaluation of existing prevention programs.* Prevention evaluation could be improved by (1) methodological research to improve prevention evaluation techniques and (2) dissemination of prevention evaluation findings and techniques to prevention planners and programers throughout the country.
6. *Increased attention to women as providers of prevention services.* The role of women and women's organizations in implementing community prevention projects should be evaluated. Other areas for evaluation could include the success of various types of women's organizations in implementing prevention programs for both women and men, and the social and political impact of "networking" among individuals and organizations concerned with preventing alcohol problems in women.

Finally, although this paper raises some special issues in preventing alcohol problems among women, the importance of *general* prevention research should also be stressed. As described in this paper, several new approaches to prevention are currently being proposed and discussed, including various legal and social controls, environmental modifications to insulate drinking and reduce drinking problems, and new approaches to education, mass communications, and community organization. In considering these approaches it will be important to avoid premature commitment to prevention policies based on inadequate or incomplete data. Instead, proposed strategies should be tested in small-scale demonstration projects and careful evaluations of "natural prevention experiments," such as naturally occurring changes in drinking-related laws or policies. By supporting rigorous evaluation of various strategies' effectiveness in reducing specific alcohol problems in specific target groups, society may make a good investment toward reducing alcohol problems among both women and men.

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Chapter 4

The Diagnosis And Treatment Of Alcoholism In Women

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Abstract

This paper reviews the literature on alcoholism among women, with particular attention to the issues of diagnosis and treatment. The key question is raised as to whether alcoholism among women is a qualitatively different clinical syndrome than among men, thereby requiring new models of etiology and distinct treatment regimens. Because of the serious deficiencies in the clinical research literature on female alcoholism, the paper concludes that the answer is still unclear; continued efforts to delineate both commonalities and differences between male and female alcoholics are strongly advocated.

Most authors agree that no "typical female alcoholic" exists and that women alcoholics are a highly heterogeneous group. Attempts have been made to identify discrete subtypes using such classifying variables as type of psychopathology, personality type, and demographic variables. There is a consensus that most female alcoholics suffer from common problems of low self-esteem and poor self-concept, although it remains unclear as to whether such traits are the cause or result of problem drinking.

The paper reviews a host of comparative studies between male and female alcoholics, examining such factors as history and social context of drinking, patterns and amount of consumption, and symptoms and consequences of alcohol abuse. Consistent differences between males and females on drinking-related variables are identified; confounding variables such as social class and cultural "double standards" which complicate the interpretation of differences are discussed.

Current etiological models of female alcoholism and their implications for treatment are discussed. Finally, the paper reviews the results of evaluation studies which have sought to compare treatment outcome rates for males versus females and to identify prognostic factors associated with favorable outcomes for the two groups.

Introduction

During the last decade, public and professional groups have increasingly focused on the legitimacy and necessity of research on and

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treatment of alcoholism among women. The popular press published stories highlighting "the woman alcoholic"; prominent women gave public testimonials of their own struggles to overcome alcoholism. The political and historical thrust of the women's liberation movement, with its accompanying changes in sex-related social roles, has added impetus to this growing attention. In response, public and private resource allocations have gradually shifted toward support of treatment, research, and prevention programs directed toward women alcoholics.

The actual rate of alcoholism among women in the United States is unknown (Beckman 1975; Lindbeck 1972). Estimates seem to center around a figure of approximately 1 million (Beckman 1975). Moreover, there appears to be a lack of consensus about whether alcohol abuse among women is increasing or remaining constant. Whitehead and Ferrence (1977), however, have reported recent evidence citing a steady increase in the proportion of women using alcohol and a concomitant increase in the number of women who are heavy drinkers. The growing numbers of women entering the labor force and seeking economic and social equality undoubtedly mean women will be increasingly exposed to alcohol. And, as Gomberg (1976*b*) has somewhat facetiously suggested, this historical transition may also "include equal rights to intoxication." Since a roughly monotonic relationship between exposure to alcohol and alcoholism seems to exist (Mulford 1964), excessive drinking among women probably is increasing.

This probability raises a host of questions about whether the expression of alcoholism as a clinical syndrome—with its attendant medical and social consequences—is identical for men and women. This paper reviews the state of the literature on alcoholism among women, with a specific clinical perspective on the critical issues of diagnosis and treatment.

There is a regrettable dearth of clinical alcoholism research on women alcoholics (Blume 1980). As Schuckit and Morrissey (1976) have pointed out, "most information on alcoholism in women is presented not as a primary study of the woman alcoholic but as a comparison of women to the most frequently utilized yardstick of alcoholism—the male alcoholic."

Without invoking charges of sexist bias against alcoholism researchers, several legitimate explanations can be offered for this fact. First, more men than women are "heavy" or "problem" drinkers, or alcoholics (Cahalan et al. 1969). Thus, fewer women enter treatment populations than the corresponding populations of men (Blume 1980). In large-scale studies of treatment, therefore, samples of women are often excluded because of the small numbers involved and the consequent invalidity of statistical analyses on subsets of women (Armor et al. 1978; Polich et al. 1980). Hyman (1976) has commented on the sheer logistical problems of doing followup studies on women alcoholics. Since women frequently change their names after marriage or divorce, they are more difficult to locate and interview. Finally,

despite the so-called sexual revolution and accompanying new freedoms, societal norms for drinking patterns and intoxication continue to impose a sexual double standard. Women are still subject to far more stringent social disapproval for excessive drinking than are men and, therefore, women alcohol abusers often remain "hidden" and inaccessible to researchers.

The majority of studies on women alcoholics tend to explicate social history data, personality traits, or motivational characteristics of the samples studied. Only a few studies actually provide data on the effectiveness of treatment, or on the relationship between identified background factors and/or personality characteristics and treatment prognosis (Beckman 1976). The interpretation of research results on studies of women alcoholics is often confused by poor study designs; inadequate, biased, or unspecified sampling procedures; and absent or inadequate control groups. The need for more careful research on women alcoholics is evident.

The overwhelming majority of research on all facets of alcoholism to date has been based on male samples, which certainly is undesirable from the perspective of those interested specifically in women's problems. Nonetheless, a voluminous literature on diagnosis and treatment of alcoholism exists. It would be precipitous, if not irresponsible, to assert that none of what is known about the phenomenon of alcoholism as it is expressed and treated in men can be generalized to their female counterparts. That the gender differences between alcoholic men and alcoholic women supersede what alcoholics may share in common has not been established.

Certainly, caution should be exercised about making blanket generalizations from what we know about alcoholism among men to alcoholism among women. Yet, it would seem equally reasonable and scientifically sound to require a standard of empirical evidence demonstrating that women alcoholics differ from their male counterparts in the patterns and expression of the disorder, its causes, and/or the most effective treatment methods. The critical question is whether, as Amark (1961) has posited, alcoholism among women is indeed a qualitatively different clinical syndrome than male alcoholism.

This paper, then, will address the empirical literature comparing male and female alcoholics in the manifestation, etiology, and treatment prognosis of the disorder. To the extent that similarities exist on these dimensions, much of what is known about diagnosing and treating alcoholism gleaned from the vast body of literature on male samples would be applicable to females. To the extent that systematic differences between the groups are demonstrated, differential diagnostic criteria and treatment approaches for female alcohol abusers would be indicated. Then, the measures used to evaluate the effectiveness of treatment of female alcoholics should be modified from those traditionally used for male samples.

Diagnosis Of Female Alcoholism

Who Is the "Typical" Woman Alcoholic?

To identify and diagnose, the clinician's task would be greatly simplified if a "typical female alcoholic" could be described, analogous, say, to a "typical diabetic" or even a "typical female hysteric." Many studies have attempted to describe the attributes of "the alcoholic woman." However, generalizations from this literature are hazardous due to methodological problems like samples on specific populations, such as prisoners and low socioeconomic status women; inconsistent definitions of alcoholism; and imprecise measurements. Nevertheless, a certain consensus emerges from the literature describing what appears to be the patterns of drinking problems in women, the natural history of the disorder, and demographic and drinking context characteristics of alcoholic women.

Gomberg (1976*b*) has profiled the woman at high risk for developing alcohol problems as one

> . . .with an early history of deprivation, of trouble in early family life in the form of death, desertion, psychiatric disorder, or alcoholism among relatives. She develops into an isolated, distrustful adolescent, fearful of dependence, rather pessimistic and depressed, often unpredictably impulsive and inadequate in frustration tolerance, and. . .(in) mechanisms for coping with stress. The facade she presents is one of intense femininity, and overidentification with the traditional female role. (p. 629)

Sclare (1970) offers another picture:

> . . .the female alcoholic is about 45 years old, began drinking at about 30 years, has a 50 percent chance of having another psychiatric illness, displays withdrawal symptoms in 50 percent of cases, and has attempted suicide in 33 percent of cases. (p. 123)

Sclare also states that there is a striking incidence—20 percent—of primary depression preceding the alcoholism in the women studied.

Other studies of women alcoholics indicate that the average alcoholic woman drinks alone (Beckman 1975; Lisansky 1957; Wanberg and Horn 1970), hides her drinking problems (Beckman 1975; Lindbeck 1972; Senseman 1966), and is often protected from drinking difficulties by her husband (Curlee 1968; Senseman 1966). Not surprisingly, then, the typical woman alcoholic has a relatively low rate of social problems related to alcoholism and is rarely seen drinking publicly in bars or taverns (Curlee 1968).

Other descriptions say that the "typical" female alcoholic tends to be between 40 and 50 years of age when hospitalized (Beckman 1976; Schuckit et al. 1972). Disproportionate numbers of Catholics and Irish are described as appearing among female alcoholic samples (Senseman 1966). Finally, several studies have cited a relationship between female alcohol abuse and sexual dysfunctions, although, again, prob-

lems of causal direction are at issue. Schuckit and Morrissey (1976) assert that sexual problems are seen in female alcoholics regardless of socioeconomic class, but that the specific difficulties vary with the sample studied. Recurring reports in the literature describe the female alcoholic as either promiscuous (Wall 1937) or "frigid" (Curran 1957; Kinsey 1966; Levine 1955; Schuckit et al. 1972). Schuckit and Morrissey (1976) state that the former problem typifies lower status patients, whereas the latter is characteristic of the higher status female alcohol abuser.

Subtypes of Female Alcoholics

Despite repeated attempts to capture the essence of the "female alcoholic personality syndrome," that prototype remains elusive. The only agreement that seems to exist on what constitutes the female alcoholic personality centers on the concepts of a poor self-concept and low self-esteem (Beckman 1978; McLachlan et al. 1979), although it is unclear whether such traits are the result or the cause of problem drinking. Furthermore, it is unclear whether and, if so, how women alcoholics differ in self-concept and other personality traits from women who have other emotional or psychological problems (Beckman 1976).

While several authors express a tendency to profile the "typical alcoholic woman," most now agree that women alcoholics are a highly heterogeneous group (Beckman 1976; Gomberg 1976*b*; Schuckit and Morrissey 1976). Consequently, many researchers have focused attention on delineation of discrete diagnostic subtypes among female alcoholics. Rimmer and his colleagues (1972) have suggested that

> . . .alcoholism may be two or three separate diseases. This raises the questions of whether diagnostic differences will change the clinical picture of the course and consequences of alcohol abuse, whether the incidence of social or medical problems will vary between diagnostic groups, and, if so, what this implies for treatment and research. It may indicate that studies of alcoholism are meaningless unless the diagnostic group with which one is dealing is clearly specified. (p. 658)

Psychopathology. Several efforts have been made to distinguish among alcoholic women on the basis of type of psychopathology that they manifest. To a large extent, this emphasis on subtyping female alcoholics according to psychiatric illness arises from a belief among some professionals that women alcoholics are more pathological and evidence more maladjustment and more "abnormality" than do their male counterparts (Johnson 1965; Johnson et al. 1966). Apparently, this argument is based on the assumption that, since excessive drinking is more of a social taboo among women, to the extent that women manifest alcoholism they are also exhibiting greater pathology by its expression. Beckman (1976) however, has noted the difficulty of separating the psychological damage caused by alcoholism and the factors that predispose women to problem drinking. A similar discussion

of sorting out the intricate interplay between societal norms, labeling, and self-perception has been presented by Schuckit and Morrissey (1976).

Somewhat weak empirical evidence exists for the proposition that female alcoholics are more pathological than their male counterparts. Such evidence includes indexes of more psychiatric treatment among women alcoholics (Curlee 1970; Dahlgren 1978; Westie and McBride 1979); more frequent reports by women than men of depressed or sad mood, inadequacy, low self-esteem, and anxious affect (Belfer et al. 1971; Jones 197l; Mayer et al. 1966; Tamerin et al. 1976; Winokur and Clayton 1968); and an attempted suicide rate higher than that of men (Beckman 1975; Curlee 1970; Rathod and Thomson 1971; Rimmer et al. 1971). The significance of the higher suicide rate among alcoholic women is attenuated because of the higher rates of suicide attempts among women than among men generally (Bratfos 1971). Some evidence also exists for a greater incidence of psychiatric illness among relatives of female compared with male alcoholics (Curlee 1970; Lisansky 1957).

Some rather subtle problems arise, however, with respect to the interpretation of these findings. First, in most cases, it is impossible to determine whether the women being studied had an affective disorder before they became problem drinkers, or if they demonstrated the transient depressed affect that results from alcohol abuse but disappears after a relatively short abstinence (Carrigan 1978; Tamerin et al. 1970). On this point, Mello (1978) has cogently argued that alcohol abuse is too complex to be dismissed as a symptom of a major psychotic or neurotic problem.

Some authors have raised important questions about whether more psychiatric treatment and more frequent diagnosis of psychiatric illness among women as compared with men might, in fact, be artifactual. Women are more likely than men, in general, to report emotional problems (Carrigan 1978). Moreover, cultural norms provide more support to women than to men for seeking psychiatric treatment, and women seek such treatment more often (Curlee 1970). Therefore, it is arguable that indexes of greater psychiatric treatment among female alcoholics reflect societal norms rather than actually indicating greater pathology.

Beckman (1976) has aptly commented on the futility of continuing to ask the question of whether women alcoholics are indeed "sicker" than males. Instead, that author has argued that researchers should focus on the issue of identifying different patterns of illness and different characteristics in female as opposed to male alcoholics.

Probably the most successful efforts to subtype alcoholic women based on type of psychopathology have been made by Schuckit and his colleagues (Schuckit and Morrissey 1976; Schuckit et al. 1969, 1972). Essentially, Schuckit's work has strongly suggested that alcoholism among women is not a unitary disorder. Two major clinical categories have been identified based on evidence of diagnosis of psychological

disorder before alcoholism occurred. Primary alcoholics are those having no preexisting major psychiatric disorders. Secondary alcoholics are defined as those evidencing alcoholism in the midst of other psychiatric problems. Schuckit and Morrissey (1976) further identify two categories within the "secondary alcoholic" type: "affective-disorder alcholics"—women with secondary alcoholism and primary affective disorders, and "sociopathic alcoholics"—women with secondary alcoholism and histories of serious antisocial lifestyles antedating their alcohol abuse.

This work suggests that clinicians should be particularly sensitive to the possibility of primary psychiatric illness—for example, depression—in female alcoholics with an accompanying symptomatic abuse of alcohol and/or other drugs. Such diagnostic distinctions suggest differential treatment strategies such as emergency psychiatric care to prevent suicide and/or antidepressant drug administration.

Other Diagnostic Subtypes. Other bases for diagnostic subtyping among female alcoholics have been proposed by several authors, although the relationship and applicability of such groups to different treatment approaches varies somewhat.

Mogar et al. (1970) have subtyped both male and female alcoholics on the basis of personality types using the MMPI (Minnesota Multiphasic Personality Inventory). Among women studied, five types were distinguished: normal, depressive, hysterical, psychopathic, and passive-aggressive. Four types were distinguished among male alcoholics: passive-aggressive, depressive-compulsive, schizoid-prepsychotic, and passive-dependent.

Beckman (1976) has emphasized the importance of distinguishing women who misuse multiple substances from those who exclusively misuse alcohol. A higher incidence of drug use in addition to alcohol has been reported among women than among men alcoholics (Glatt 1961; Gomberg 1976 *a*; Morrissey 1978).

Prescribing physicians should be knowledgeable about their patients' drinking habits and cognizant of the possibilities of drug cross-dependency and the dangerous potentiating interactions of alcohol with other drugs.

Demographic variables also have been mentioned as a vehicle for subtyping alcoholic women. Schuckit and Morrissey (1976) have consistently stressed the importance of socioeconomic factors as discriminating and controlling variables. Ethnicity has also been raised as a key subtype basis, with black women emphasized as an important subcategory among female alcoholics. The latter emphasis arises from the disproportionately high number of black female alcoholics and the possibility that different subcultural factors may contribute to the development and expression of alcohol problems among black females. There is evidence that black women are at higher risk for incurring alcoholism relative to black men than are white females compared with white men. Several different explanations have been advanced to explain this phenomenon, including the assumption that a more

permissive drinking environment exists for black women within their culture. Some have attributed higher alcoholism rates among black women to the stresses associated with dual roles they often play in supporting their families, while also acting as mother housekeepers (Bailey et al. 1965; Roebuck and Kessler 1972).

Finally, Bromet and Moos (1976) have provided some evidence for the confounding effects of marital status among alcoholic women and argued for subtyping along this dimension. According to these authors, alcoholism is expressed differently in married as opposed to unmarried women. They say this difference should be reflected in the development of relevant treatment goals for the two subgroups, for example, adapting the social climate in married households to be more conducive to an abstinent lifestyle.

Drinking Variables: Male/Female Comparisons

History and Context of Drinking. Several authors have demonstrated a different pattern in the development of alcoholism and social-contextual expression between men and women. First, women usually begin both drinking and problem drinking at an older age than men, approximately 4 to 8 years later (Beckman 1976; Elder 1973; Gomberg 1976*b*; Horn and Wanberg 1969; Lisansky 1957; Rathod and Thomson 1971; Rimmer et al. 1971). Although their history of problem drinking is short in comparison with men, women are said to progress more rapidly ("telescoping") from initial problem drinking through the later stages of alcoholism (Beckman 1976; Curlee 1970; Dahlgren 1978; Johnson et al. 1966; Lisansky 1957; Lowenfish 1977; Sclare 1970). Thus, women seem to require first hospital treatment at about the same age (40 years) as male alcoholics (Sclare 1970; Wood and Duffy 1966).

There seems to be some disagreement in the literature about how useful age of initial heavy or alcoholic drinking is as a diagnostic or prognostic variable among females. Kinsey (1966) has distinguished three subgroups: those with early beginning and rapid development; those with early beginning and later development; and those with later beginning and rapid development. Other authors have also argued for the importance of distinguishing subtypes on the basis of age when heavy drinking begins (Cramer and Blacker 1963; Curlee 1969). Gomberg (1976*a*) states that it is

> . . .necessary to examine the different temporal patterns of development of alcoholism among women and see how these relate to therapy and prognoses and also to explore the relationship between differences in temporal patterns and development of alcoholism. . .and how these relate to sex roles, constraints, social class, and changes over time. (pp. 134-135)

In contrast, Schuckit and Morrissey (1976) state that no one knows the importance of the fact that women begin problem drinking later because no close correlation exists between the age of initial drinking and later alcoholism. Yet, length of drinking history has been identified as an

important negative prognostic factor in studies of male alcoholics (Armor et al. 1978; Polich et al. 1980). This finding suggests a possibly better treatment prognosis for female alcoholics with relatively short problem drinking histories.

Regarding drinking context, women are consistently reported to drink alone more often than men and to drink in the privacy of their homes more frequently than men (Bourne and Light 1979; Horn and Wanberg 1969; Sclare 1970; Wood and Duffy 1966). This pattern appears to hold up even among skid row women who maintain more solitary drinking patterns than their male counterparts, and remain more sensitive about social disapproval of problem drinking (Klaiber et al. 1972). Notwithstanding women's preference for solitary drinking, the frequency of drinking problems among the husbands of alcoholic women is considerably greater than that found among either the general population or the wives of alcoholic men (Lisansky 1957). The differences in drinking context may mean that different treatment strategies for men and women would be useful if they attempted to modify environmental factors associated with alcohol abuse.

Schuckit and Morrissey (1976) noted in their review of differences between male and female alcoholics that socioeconomic status, rather than sex, may be responsible for many of the reported differences in drinking context between male and female alcoholics. In particular, they emphasize the confounding effect of socioeconomic status (SES), arguing that lower SES women have drinking histories similar to the literature reports on male alcoholics, while higher SES women fit the stereotype presented in the literature of the "typical woman alcoholic." Moreover, Schuckit and Morrissey maintain that comparisons between male and female alcoholics should be viewed within the context of differences between men and women in the general population. This latter point is especially well-taken, given the societal double standards for the sexes regarding excessive drinking and public inebriation.

Patterns and Amount of Consumption. Several researchers have compared differences in patterns of drinking and amount of consumption between men and women alcoholics. The most frequently cited pattern differences are that, compared with women, men report more daily drinking, more drinking throughout the entire day, more benders or binges, and more frequent drinking (Horn and Wanberg 1969; Rimmer et al. 1971; Schuckit and Morrissey 1976). Given the amount of consumption, male alcoholics are reported to engage in higher weekly consumption (Rimmer et al. 1971) and to drink more each time they drink (Morrissey 1978; Rimmer et al. 1971). Women are reported to drink more liquor (spirits) and wine but less beer, compared with men who drink (Horn and Wanberg 1969; Wanberg and Horn 1970). Clark (1966), while generally conceding that women typically drink less than men, cites some evidence to suggest that when alcohol is used in excess to manage tensions and stress, women may consume as much as men. Schuckit and Morrissey (1976) again emphasize that these differential patterns concerning frequency and amount of alcohol

consumed, type of drink preferred, and time of day during which drinking occurs may be confounded with social class of the groups sampled.

The classic statistic used to diagnose alcoholism based on quantity and frequency is the so-called "Ledermann Curve" of the distribution of alcohol consumption. Based on that curve, various cutting points have been proposed as diagnostic of alcohol abuse or alcoholism. Some authors have proposed a cutoff of 15 centiliters of absolute alcohol daily on this curve; others have proposed a cutoff in the area of 20 centiliters (Blume 1980). Since consumption curves for men and women in the general population differ markedly, Blume (1980) has argued that any cutoff point for defining alcoholism on the basis of intake for males and females is not validly equivalent. Citing data presented by Armor et al. (1978), based on national population surveys, Blume notes that the average intake of absolute alcohol per day by self-reports for a 30-day period is 108 grams for women and 197 grams for men. Therefore, she has strenuously opposed using a single figure for both sexes.

In a recent unpublished study of 122 female and 876 male intakes to a nationally representative sample of alcoholism treatment facilities, including both inpatient and outpatient, Braiker et al. (in press) have found no differences between males and females on the number of reported binges, although males report binges of longer duration than females. Also, the authors found no differences in consumption based on type of beverage—beer, wine, or spirits. However, the expected excess of absolute alcohol consumed for men in comparison with women was apparent during a 30-day reporting period. Men consumed more on a typical drinking day, and had a higher average of total alcohol consumed. These differences essentially disappeared when quantity measures were adjusted for average body weights of males and females, lending support to Blume's argument (see table 1).

Symptoms of Alcohol Dependence. Using a male sample, Polich et al. (1980) identified six core symptoms of alcohol dependence that were highly correlated with consumption and significantly prognostic of alcoholic relapse. These six serious symptoms were identified as: tremors (shakes), morning drinking, blackouts, loss of control, missing meals because of drinking, and continuous drinking bouts of 12 hours or more. From a clinical perspective, as well, most of these symptoms are widely held to constitute the central manifestation or expression of the alcohol dependence syndrome. Clinical symptomatology of late-stage alcoholism also, of course, includes experience of delirium tremens, hallucinations, and seizures.

In comparative studies, Rimmer et al. (1971) stated that male alcoholics reported greater incidence of morning drinking and more frequent experience of delirium tremens than female alcoholics. Both Tamerin et al. (1976) and Rimmer et al. (1971) report higher rates of blackout in men—75 to 90 percent for men, and 60 to 80 percent for women.

Table 2 shows the distribution of the six serious alcohol dependence symptoms reported at intake in samples of men and women studied by

Table 1. Distribution of Alcohol Consumption for Females and Males at Intake to Treatment

Percentage Distribution Ounces of Ethanol[1]	Females	Males
Less than 2 ounces	8	8
2-5 ounces	23	15
5-7 ounces	15	7
More than 7 ounces	50	70
Average quantity ethanol	8.0	11.5
Average ounces ethanol per pounds body weight[2]	.06	.07
(N)	(122)	(876)

[1] Quantity consumed on typical drinking days during 30-day period before last drink (includes all beer, wine, and liquor).

[2] Average quantity divided by reported mean weights for males (166 lbs) and females (131 lbs).

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Braiker et al. (in press). These data indicate that after development of the alcoholism syndrome—presumably indicated by admission to an alcoholism treatment facility—women and men show only small and insignificant differences in serious dependence symptomatology during the 30-day period before their last drink. The only exception is that a much higher percentage of men report continuous drinking for 12 hours or more.

Adverse Consequences of Alcohol Abuse. Almost all definitions of alcoholism, despite their inconsistencies, share the view that a diagnosis of alcohol abuse depends, in part, on evidence of serious legal, social, and/or health consequences as a result of drinking (Armor et al. 1978; National Council on Alcoholism Criteria Committee 1972).

Again, several studies have attempted to compare the nature and extent of the consequences of alcohol abuse as they affect men and women. The most frequently cited differences include that men report more job loss from drinking (Bourne and Light 1979; Rimmer et al. 1971), more drinking-related arrests (Gomberg 1976*b*; Rimmer et al. 1971), more hospitalizations for alcoholism (Gomberg 1976*b*; Rimmer et al. 1971), and more serious histories of school problems and sociopathic behavior as youths (Rimmer et al. 1971). Women seem to experience more serious consequences within the contexts of familial or marital disruption (Bourne and Light 1979; Gomberg 1976*b*).

Table 2. Distribution of Serious Dependence Symptoms for Treated Males and Females at Intake

Dependence Symptom	Percentage Distribution Reporting Any Occurrence[1]	
	Females	Males
Tremors	64	55
Morning drinking	60	67
Blackouts	55	51
Loss of control	68	62
Missing meals due to drinking	72	75
Continuous drinking for 12 hours or more	40	62
(N)	(122)	(876)

[1] During 30 days before last drink.

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Ashley et al. (1977) have reported some evidence suggesting that the nature of medical consequences for the two sexes may be different. Tamerin et al. (1976), studying a group of upper SES patients, reported that men more frequently evidenced liver pathology—60 percent compared with 45 percent of women alcoholics. Braiker et al. (in press), however, found few differences among samples of male and female alcoholics at intake with respect to either major alcohol-induced health consequences such as liver disease, or other medical problems that may be aggravated by excessive alcohol consumption. Table 3 shows the incidence of health, law enforcement, and socially adverse consequences reported at intake among the samples included in the Braiker et al. study.

Other reasons may also account for the reported differences in consequence rates for males and females. It has been observed that women are less likely than men to be arrested for problems associated with drinking and to have lower rates of automobile accidents associated with drinking. However, these differences may be attributable to the fact that women in general are less likely to be arrested than men. Women are more likely to be taken home by the police rather than

arrested (Seitz 1978); also, men are more likely to be driving, especially in social situations when alcohol has been consumed. The fact that more men report experiencing job loss may well be confounded by the fact that men and women do not participate equally in the labor force, although this difference has been declining over recent years.

Treatment Of Female Alcoholism

Etiological Models: Treatment Implications

No one factor has been found to explain or predict why some women develop alcoholism and others do not (Mello and Mendelson 1979). This failure to isolate any single etiological factor is not, however, specific to women; the problem applies equally to their male counterparts. Most sophisticated researchers in the field acknowledge that alcoholism results from some complex interplay of physiological, psychological, and sociological variables. Moreover, as Mello and Mendelson state in their review of causality, "These factors are so interwoven that. . .it is frequently impossible to determine which are causal, consequential, or concordant with alcoholism."

A review of the treatment of alcoholic women would be incomplete without some attention to current models of etiology, since many therapeutic strategies derive from a medical model. That model assumes that an underlying conflict or dynamic motivates symptomatic excessive drinking. Therefore, the theory of etiology that a clinician accepts will guide, at least in principle, the treatment strategies he or she employs.

This section, then, will briefly review current etiological models of alcoholism in women and their implications for treatment. Paradoxically, some of these models have been invoked to explain why fewer women than men become alcoholic. That is, they seem to be models of "nonetiology" for women. Given the changing roles of women resulting from the liberation movement and increased participation of women in the labor force, it may be that those causal models of alcoholism previously thought applicable primarily to men may now be generalizable to female alcoholics as well.

The Power Theory and Self-Esteem Models

According to the power theory (McClelland et al. 1972), men who have accentuated but unsatisfied needs for personalized power drink excessively as a compensatory behavior to overcome the doubts they have about their potency. Apparently, these men experience conflict between their need to be strong and powerful, and their simultaneous intrapsychic feelings of weakness. Unfortunately, empirical studies that

attempt to apply the power model to female alcoholism are virtually absent. In fact, the argument has even been advanced that, since

Table 3. Adverse Consequences of Drinking Reported by Females and Males at Intake[1]

Adverse Consequences	Females (Percentage)	Males
Health		
Any liver disease	19	25
Pancreatitis and/or GI bleeding	5	9
Medically advised to stop drinking	28	33
Hospitalized because of drinking	2	3
Law Enforcement		
Arrested for driving while intoxicated (DWI)	9	14
Jailed because of drinking	2	9
Arrested for drinking unrelated to driving	8	16
Work and Interpersonal Relationships		
Lost job because of drinking	3	13
Missed work or other activities because of drinking	64	64
Got into fights or arguments because of drinking	50	36
Spouse or girlfriend/boyfriend left because of drinking	5	9
Accident resulted in injury to self because of drinking	5	4
Accident resulted in injury to other because of drinking	3	4
Mean number of consequences reported	3	4
(N)	(122)	(876)

[1] Incident reported having occurred during the year before intake.
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women are not expected to be strong, assertive, and dominant, they are less likely to experience the need for power and, therefore, less likely to abuse alcohol to achieve that end.

The closest analogs to McClelland's theory as it might apply to women are models that invoke concepts of low self-esteem, poor self-concept, and sense of inadequacy as the underlying causes of abusive drinking among women (Beckman 1978; Blane 1968; Hornik 1977; Kinsey 1968). Excessive drinking among women with this personality syndrome is believed to play a compensating function by, at least temporarily, blunting self-doubt and artificially increasing feelings of competence.

Beckman (1978) has noted that the level of self-esteem in female alcoholics is important. If a poor self-concept facilitates drinking, self-esteem may have to be raised before an adequate recovery from alcoholism may be made. In a recent study, Beckman (1978) compared the self-esteem of women alcoholics to that of men alcoholics, women nonalcoholics in treatment for psychiatric disorders, and women who were not in treatment and without a history of substance abuse or

serious emotional disorder. As predicted, the women alcoholics in treatment (N=120) initially showed exceptionally low self-esteem, even lower than that of men alcoholics. Beckman's results also showed a greater increase in self-esteem among the treated women alcoholics than among treated male alcoholics (1978).

Sex-Role Conflict and Dependency Theories. While the power theory, as originally formulated, addressed only masculine sex-role identity problems, several other theories generally classified as dependency models (Blane 1968; McCord et al. 1960; White 1948) have been applied to both males and females, with accordingly different "slants" on the problem.

Originally developed with exclusively male samples, dependency theories hold that alcoholism develops when strong underlying dependency needs have remained unsatisfied. These dependency needs are considered to be in conflict with men's simultaneous desire to appear self-reliant. Since drinking is considered a masculine activity, it provides an opportunity to present simultaneously a facade or image of masculinity/manliness, while still allowing the drinker to satisfy dependency needs of security, comfort, and warmth. Dependency theories are similar to power theories, which have been based on male samples, in that they have been used to explain why there are fewer female alcoholics than male alcoholics. The argument is that women have socially approved opportunities to express their dependency needs. To the extent that some women still become alcoholics—given cultural support for their dependency expression—these women are believed to have intense, pathological dependency needs with attendant conflicts.

Wilsnack (1973, 1974, 1976) proposes another hypothesis concerning the development of alcoholism in women that is related to dependency needs and underlying sex-role conflict. This "womanliness hypothesis" asserts that the psychological function of excessive drinking is to increase feelings of traditional femininity in women who have been described clinically as expressing "role confusion," "masculine identification," "inadequate adjustment to the adult female role," and "poor feminine identification" (Kinsey 1966; Wall 1937; Wood and Duffy 1966). According to Wilsnack, no empirical evidence exists for the position that women who drink excessively do so to act or feel more like men. On the contrary, her research suggests that alcoholic women consciously value their femininity and want to feel more like women. Several other investigators (Belfer et al. 1971; Kinsey 1966; Lisansky 1957) also have reported that alcoholic women, sex-typed attitudes, values, and interests.

In summary, some form of sex-role conflict may be present in many alcoholic women. However, sex-role conflict alone is clearly not sufficient to produce alcoholism, and as Wilsnack (1976) suggests, biological and sociocultural factors must be considered.

The theories of sex-role conflict suggest a need for increased research and clinical attention to the pressures on alcoholic women to conform to traditional notions of femininity, and to the role those

pressures play in their drinking behavior. Thus, in providing proper or adequate treatment for alcoholic women, it may be essential to work with significant persons in the alcoholic woman's life. Intervention through marital or family therapy could help those persons reduce the rigidity of their demands for traditional feminine behavior (Beckman 1975).

Stress Models. In their review of the literature, Schuckit and Morrissey (1976), Wilsnack (1976), and Beckman (1976) all concur that the development of alcoholism in women is more directly linked to specific life-stress events or physiological stressors than it is for men. Among the specific interpersonal stress events women said precipitated their heavy drinking are divorce, abandonment or rejection by a spouse or lover, and the death of someone close to them (Gomberg 1976*b*). Many studies have reported that alcoholic women frequently attribute their alcoholism or drinking problems to female physiological functions such as premenstrual tension, menopause, and various female physiological problems including dysmenorrhea, infertility, miscarriages, and hysterectomy (Belfer and Shader 1976; Curlee 1970; Johnson 1965; Johnson et al. 1966; Kinsey 1966; Lindbeck 1972).

These reports linking specific stresses to alcoholism among women apparently derive from the assumption that the pharmacological sedative properties of ethanol reduce tension and, therefore, that individuals who are experiencing acute anxiety or stress drink to relieve this symptom. The empirical evidence about whether alcoholism actually reduces tension, however, is contradictory (McNamee et al. 1968; Nathan et al. 1970).

Nevertheless, many women alcoholics claim that alcohol reduces their tension, at least from a subjective standpoint (Wilsnack 1973). With women who report a link between a specific precipitating stress and excessive drinking, treatment approaches based on a crisis intervention model would seem clearly indicated. Such treatment strategies should help the patient to develop coping methods other than alcohol self-medication and, when possible, to modify situational factors in the environment that are causing or exacerbating the experienced stress. Hormonal treatment may also be indicated when physiological stressors are involved.

Familial Background Models. A rather clear consensus has emerged in the literature on familial background characteristics of alcoholic women. In particular, such women are much more likely than nonalcoholic women to have parents, especially fathers, who are alcoholics (Driscoll and Barr 1972; Lisansky 1957; Sherfey 1955; Winokur and Clayton 1968; Wood and Duffy 1966). These data may indicate the importance of cross-sex modeling as a factor in the etiology of alcoholism in women, although they may also suggest the influence of some genetically linked biochemical or metabolic imbalance. Some studies have shown that a sizable percentage of alcoholic females feel they had a cold, severe, domineering mother, and a warm, gentler, but often alcoholic father (Driscoll and Barr 1972; Kinsey 1968).

Given these frequently reported historical family dynamics on alcoholic women, clinicians should be attentive to the assessment of parental drinking practices and personality styles and should address the effects of such early experience on the patient's self-concept and drinking behavior. Moreover, the possibility of inadequate mother-identification and/or cross-sex alcoholic role modeling suggests that female therapists with certain women alcoholics may be of particular therapeutic value.

Treatment Outcomes for Alcoholic Women

A review of the general literature on alcoholism treatment effectiveness reveals that most studies either fail to distinguish between outcome rates for men and women alcoholics, or exclude the latter group from the study samples altogether. Among those studies that distinguish outcome rate by sex, varying and often conflicting results are reported. The majority of such studies report a poorer prognosis and lower treatment effectiveness rates for women than for men (Bateman and Petersen 1972; Curlee 1970; Demone 1963; Glatt 1955, 1961; Pemberton 1967; Seelye 1979). One unpublished doctoral dissertation (Davis 1966) found that, although women were more unstable at followup on personality measures, they reported significantly higher improvement than males as measured by abstinence beyond 18 months.

Still other studies report no differences in outcome rates between men and women (Davies et al. 1956; Fitzgerald et al. 1971; Gillies et al. 1974; Ritson 1968; Selzer and Holloway 1957; Smart 1979).

In the study by Braiker et al. (in press) in which few sex-related differences on critical consumption, symptomatology, or adverse consequence variables were found at intake, outcomes between the two groups were also about equivalent at a 30-month followup. The only notable differences involved a slightly higher rate of long-term abstention—1 year or longer—among females and a slightly higher rate of nonremission among males (see table 4).

Several factors are responsible for the confusing impression obtained from reviewing studies that compare relative outcome rates for treated male and female alcoholics. These factors include noncomparable or poorly specified outcome criteria, inadequate sample sizes, and followup periods of inadequate duration. In her summary of an extensive review of the literature on treatment outcomes on female alcoholism, Blume (1980) concludes:

> What can we make of the assorted and sometimes conflicted data on outcome? First, I believe we must agree with. . . [a] call for a moratorium on all treatment outcome studies on heterogeneous groups of alcoholic patients. Second, broad outcome studies of the results of multimodal treatment programs are of less current interest and value than specific studies of the differential effectiveness of specific treatment in specifically-defined groups. Whether criteria for favorable

> outcome in alcoholic women should differ from that in men is another question for study. (pp. 48-49)

Prognostic Factors for Female Alcoholics. Despite the confused and conflicting results on overall outcome rates, several researchers have attempted to identify factors associated with either positive or negative prognosis among women alcoholics. Thomas (1971) compared the characteristics of 90 successfully treated and 90 unsuccessfully treated women alcoholics and identified the following pretreatment factors as negatively related to success: alcoholism in the subjects' fathers, the degree of alcohol-related illness, and the use of drugs other than alcohol. He also showed that successfully treated women at the followup were characterized by changes in their social groups—from heavy-drinking groups to little-or-no-drinking groups; lower frequency of attendance at drinking functions; improved social relationships; involvement in AA; and successful experiences in general.

In a 3-year followup study of alcoholic women, Schuckit and Winokur (1971) reported that good prognostic factors for their small sample included younger age, later age when heavy drinking began, and shorter duration of alcoholic drinking. In the same study, successfully treated women were identified as those who were more likely to have become hospitalized because of a suicide attempt or threat and had brothers and sisters with less emotional illness of any type.

In contrast to the previous study, Bateman and Petersen (1972) found that women who were older and had had a first drink at an earlier age were more likely to be abstinent at a 6-month followup. This study, however, used a self-administered questionnaire mailed to a sample of ex-alcoholic patients from a State alcohol rehabilitation center. Thus, response bias problems were inevitable. Nevertheless, the data show that factors associated with abstinence generally were different for men than for women. For women, a favorable prognosis tended to be associated with low SES, low educational achievement, low occupational status, but high intelligence. A more recent study of 96 females located 30 months after treatment indicated higher SES and strong motivation at intake to totally stop drinking as significant positive prognostic predictors for women (Braiker et al. in press).

Other factors found to be associated with poor treatment outcome include four or more previous admissions to treatment for alcoholism and not living with husband (Schuckit and Morrissey 1976). Better outcomes among women have also been reported as associated with evidence of underlying psychoneurosis, perhaps related to affective-disorder alcoholism (Pemberton 1967), good work histories, older age at which alcoholism occurred, and older age at initial admission (Selzer and Holloway 1957).

In one of the few studies that controlled for psychiatric subtype among females, Schuckit et al. (1972) reported the poorest prognosis for sociopathic alcoholics, moderate prognosis for primary alcoholics, and a positive prognosis for affective-disorder alcoholics. Finally, Smart

(1979) found self-satisfaction and Antabuse to be significant predictors of positive outcome among females, whereas only lower degree of physical impairment was a significant predictor among males studied.

Table 4. Drinking Status at 30-Month Followup for Males and Females

Drinking Status	Percentage Distribution	
	Females	Males
Remissions		
Abstained 1 year or more	25	18
Abstained 6-11 months	6	7
Low quantity[1]—no symptoms, no consequences	11	11
High quantity[2]—no symptoms, no consequences	5	4
Nonremissions		
Any adverse consequences	4	7
Any serious dependence symptom	10	10
Both consequences and symptoms	39	43
(N)	(96)	(596)

[1] Quantity consistently low (i.e., less than 2 ounces of ethanol) on a typical drinking day during the 30-day period before last drink.

[2] Quantity consistently not low (i.e., 2 to 5 ounces of ethanol) on a typical drinking day during the 30-day period before last drink.

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However, while Smart found that men and women differed with respect to factors predicting good outcome, he failed to find the subject's sex a significant predictor in a prognostic analysis conducted on the combined sample of men and women.

Treatment Setting and Amount. Despite much discussion and speculation, little systematic information exists in the literature on the relative benefits of different treatment settings or amounts for female alcoholics.

Seelye (1979) has reported somewhat longer length of hospitalization for women who are somewhat disproportionately represented in the poor outcome group. Smart (1979) found that men and women received similar types and extent of treatment in his sample of hospitalized patients; there were no differences in outcome between the sexes. Braiker et al. (in press) also failed to find significant differences in outcome at 30 months related to treatment setting (i.e., inpatient/residential versus outpatient). These authors also reported few differences in the percentage of men and women receiving treatment in the respective settings, and in the amounts of treatment received by the two groups across various modalities. In a recent study of the halfway-house experience for female alcoholics, Volpe and Rooney (1979) reported that women had a higher rate of recovery in a structured as

opposed to a nonstructured program involving a home-like setting, whereas the latter seems to be more conducive to successful recovery among men (Rubington 1967).

The ambiguity surrounding where women receive treatment for their drinking problems may be one reason for the lack of good information on how various treatment settings and amounts affect female alcoholics. Many problem-drinking women probably receive help within traditional health and mental health care systems including treatment by private physicians, possibly even under diagnoses other than alcoholism.

With respect to treatment referral, Selby et al. (1978) reported that more women were referred to an emergency care unit for alcoholism by Alcoholics Anonymous and family members than were men, who were referred more often by the police. At discharge, more women than men were judged not to be in need of additional treatment. Hoffman and Noem (1975) also found a sex difference on referral showing more women than men entering treatment voluntarily. Finally, Schmidt et al. (1968) found an SES difference with respect to both mode of referral and the therapeutic regimen assigned. Individuals from higher SES brackets were more likely to be referred to a private practitioner and to receive psychotherapy; more lower SES strata individuals were referred from public agencies and were more likely to be given inpatient therapy. Schuckit and Morrissey (1976) suggest that these differences, between SES groups and the treatment they are given, may also contribute to the different treatment outcomes reported for various groups of women alcoholics.

Treatment Modalities. While some research attention has been given to the question of what modalities of treatment are most effective for female alcoholics, the results are again mixed. Lindbeck (1975) has claimed that female alcoholics utilize family or individual therapy better than group therapy, whereas the latter seems to work better for men. Curlee (1967, 1971) has also stated that individual therapy is preferable to group modalities for females. It should be noted, however, that Curlee's data are based on self-report rankings of what seemed most helpful; moreover, the relative efficacy of group versus individual therapy was not systematically compared by sex.

Avery (1976) has advocated group-oriented activities for the female alcoholic who has become isolated and "easily bored." Battegay and Ladewig (1970) also assert that alcohol- and drug-dependent women are treated more effectively in groups. Other authors favor mixed male and female groups, supplemented by all-female groups that explore women's issues (Bissell 1976; Blume 1974). Seiden (1976) has reviewed female psychology generally and points out the importance of female friendships to the general mental health of women. This claim would seem to offer support for the utility of group treatment for women, particularly all-female groups (Blume 1980).

With respect to the effectiveness of family and marital therapy for alcoholics, Steinglass (1977) has noted that little hard evidence exists

for the effectiveness of family therapy in treating alcoholism. Most of the literature on the efficacy of family therapy includes only reports in which the alcoholic member is a man; few report on families in which the target patient is a female. Even in those studies reporting on a female alcoholic patient in the context of family therapy, the case study format, involving one patient, mitigates the generalizability of the results (Dinaburg et al. 1977; Meeks and Kelly 1970; Paolino and McCrady 1977).

Most of the newer experimental therapies using behavior modification techniques have been tried primarily on male subjects, so that little can now be said about the value of such methods for female alcoholics. One study (Weins et al. 1976) followed 209 men and 52 women treated with aversive conditioning and reported a 63 percent abstinence rate for the first year. However, sex differences were not reported.

The use of psychoactive drugs in the treatment of alcoholism has been an area of both philosophical and clinical disagreement (Calobrisi 1976). Jones and Helrich (1972) found that more physicians used minor tranquilizers such as Valium and Librium "regularly" in treating chronic drinkers than used Antabuse. Physicians are more likely to prescribe all types of psychoactive medication to women than to men (Fraser 1973; Smart 1979). Since many women seek help for their drinking problems from private physicians (Fraser 1973) who in turn frequently prescribe psychoactive agents to women, serious implications regarding the iatrogenic possibilities of multiple substance abuse are clear. The problem becomes even more disturbing given the recent evidence reported by Morrissey and Schuckit (1977), indicating a drug misuse history in 25 percent of a sample of 300 alcoholic women. Obviously, the introduction of psychoactive and other mood-modifying medications into an existing problem of alcoholism may exacerbate the original problem and lead to polydrug misuse. Moreover, this may result in further medical complications as well as more difficult detoxification processing. Clearly, physicians should exercise caution and careful clinical judgment when prescribing psychoactive drugs to women alcoholics who already are misusing one substance to cope with problems and anxieties.

It would be remiss to ignore the potential beneficial effects of appropriate chemotherapy as an adjunct in the treatment of alcoholism in some women. Belfer at al. (1971) reported guardedly optimistic results after administration of antianxiety agents in the 10 days preceding menstruation to a small group of female alcoholics who reported a strong correlation between their drinking patterns and premenstrual tension. Other researchers who have attempted to correlate estrogen cycles and premenstruum with the onset of problem drinking suggest the use of various hormone therapies in treating alcoholic women. The benefit of such approaches remains to be demonstrated, however. Merry et al. (1976) have reported on the use of lithium carbonate in treating 70 patients—including 11 women—in an alcoholic treatment unit. Unfortunately, the success rates indicated by

the 1-year followup were not compared by sex. However, the favorable results on primary affective-disorder alcoholics indicate that the beneficial effects of lithium carbonate and other antidepressant medication in treating women warrants controlled-trial experimentation and careful evaluation.

Special Treatment Needs of Female Alcoholics

Until recently, few treatment programs have been geared primarily to women alcoholics, whereas several such programs have been focused primarily or exclusively on men alcoholics (Calobrisi 1976). In a survey of alcoholism treatment delivery in New York City, Blume (1980) highlighted the sheer inadequacy of facilities such as hospital beds and outpatient clinic times allotted solely for female alcoholics.

Recently, several authors advocated the position that men and women alcoholics have different treatment needs and, therefore, that separate facilities and differentiated approaches should be established for the treatment of women alcoholics. However, these views remain largely unsubstantiated by empirical evidence and should be considered, therefore, as speculative and subjective. Moreover, as Calobrisi (1976) has aptly remarked, ". . .the psychopolitics [of establishing women's treatment] are intricate."

Some authors have advocated having only women therapists as appropriate role models for female alcoholic patients (Calobrisi 1976). Given the notoriously poor self-images of women alcoholics, providing a female therapist as a role model who might stimulate positive transference and therapeutic change could be worthwhile. Although several authors have also underscored the importance of treating women in all-women groups led by women, none of these recommendations is supported by empirical evidence.

Several authors have suggested different approaches to treating the assumed problems underlying the alcoholism syndrome in men and women. For example, Tamerin et al. (1976) have suggested that therapeutic work with women focus on helping patients to accept female roles and to learn to express anger while sober. Men are seen as needing more attention in breaking their denial defenses and in persuading them to recognize their need for treatment. Beckman (1975) feels that mixed-sex therapies may not work well because women need time to help build feminine identity. She also emphasizes the need to consider the social stigma suffered by women alcoholics and the efforts that must be made for women to help them change their concepts of appropriate feminine behavior. Schuckit and Morrissey (1976) conclude:

> It has been anecdotally observed in a number of studies that if male and female alcoholics are treated together, there should be a period of time when groups are held separately. There is little data to substantiate these speculative claims, and the hypotheses need testing in clinical situations. (p. 19)

Other authors have noted special needs of women for child-care services to allow them to enter treatment (Blume 1980). Gomberg (1976*b*) has emphasized the importance of upgrading the alcoholic woman's family and emotional support system. Gomberg asserts that the issue of separate treatment facilities for women cannot be answered objectively but must remain instead a matter of opinion. This assertion may not be valid, if evaluation studies were properly designed. Nevertheless, Gomberg offers a thoughtful list of special treatment considerations for alcoholic women that could guide future research efforts: (1) recognizing the heavier social disapproval involving women alcoholics and the wariness with which women often approach a treatment situation; (2) restoring the woman's appearance as well as her health in detoxification and hospital units; (3) realizing that alcoholic women will come often with few marketable skills and in greater need of vocational help and training than men; (4) emphasizing the need for conjoint therapy with husband or lover, parent, or anyone else who will be part of the rehabilitating social environment; (5) helping the woman who is alone to develop coping and living skills; and (6) recognizing the concerns of alcoholic women relating to children.

Female Alcoholism: Future Directions

Does alcoholism among women represent a unique clinical syndrome requiring wholly different approaches to diagnosis and treatment from those established through years of empirical research and clinical experience with male alcoholics? The literature reviewed in this paper suggests that the answer is still unclear. Throughout this review, the obvious gaps in the clinical research literature on female alcoholism have been evident. It appears to be true, as Beckman (1976) has stated, that

> . . .women who. . . misuse alcohol. . . are [a] heterogeneous group with diverse backgrounds, family histories, personality traits, attitudes, coping mechanisms, and other behaviors. However, it is possible to determine some common threads in the complex fabric of social and psychological variables that affect and characterize these women. (p. 89)

Skilled methodologists and objective researchers, working with the benefit of their clinical colleagues' advice and experience, should continue to study alcoholism as manifested among women. Recognition and identification of commonalities shared among people who abuse alcohol—male or female—will permit application and further development of a substantial body of clinical and research knowledge about alcoholism. Sensitivity to and cognizance of the differences between men and women alcoholics that may supersede their common substance dependence will refine the quality of research and hopefully enhance the effectiveness of treatment for alcoholism for both sexes.

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Chapter 5

Problem Drinking Among Adolescents: A Review and Analysis of Psychosocial Research

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Abstract

This chapter reviews the present knowledge regarding the psychosocial correlates of adolescent problem drinking. Major topics reviewed include the epidemiology of problem drinking among adolescents, the relationships between problem drinking and other forms of social deviance, environmental factors associated with the development of problem drinking, and personality characteristics associated with the development of problem drinking.

Among other findings, the review shows that between the ages of 12 and 17 alcohol is the most widely used drug; that problem drinking increases sharply with advancing age during adolescence; that adolescent problem drinkers are much more likely to use other illicit drugs than nondrinkers; that during this period of life, heavy drinking is clearly associated with many other delinquent and antisocial behaviors; that both parental and peer influences are related to problem drinking; and that adolescent problem drinkers as a group have distinct personality characteristics—they are less religious, they are more tolerant of deviance, they expect relatively little success in school, and they value independence more highly than academic success, as compared with nonproblem drinkers.

The review of this body of research, however, also shows that further study is needed in order to understand the complex interactions between the personal and environmental factors which influence the development of adolescent problem drinking. It is clear from present research that adolescent problem drinking is not a unitary concept—that there is more than one type of problem drinker, each type having distinct psychosocial characteristics. More research is needed to determine whether different types become problem drinkers by way of different developmental pathways, whether distinct kinds of prevention programs are differentially effective with various types of adolescent problem drinkers, and which type(s) go on to deeper and more chronic drinking problems in the adult years.

Introduction

During the past decade, several national surveys and many empirical investigations of the psychosocial factors associated with adolescent drinking practices have been reported. Some of the existing reviews of this literature have focused on the topic of adolescent drinking in general (Barnes 1977; Blane and Hewitt 1977; Demone and Wechsler 1976; Mandell and Ginzburg 1977; O'Connor 1977; Schmidt and Hankoff 1979; Stacey and Davies 1970; Walker et al. 1978; Zucker 1979). Others have reviewed psychosocial research on both adolescent drinking and use of other drugs (Braucht et al. 1973; Green 1979; Kandel 1978; Radosevich et al. 1979). Still others have developed conceptual, theoretical, and methodological frameworks within which this body of research may be viewed (Braucht 1980; Gorsuch and Butler 1976; Jessor 1979; Sadava 1975; Zucker 1979).

This paper will be somewhat more narrowly focused than many of these existing reviews. It reviews the contemporary psychosocial literature on adolescent problem drinking to answer four specific questions.

1. What is the extent and distribution of problem drinking as compared to nonproblem drinking among adolescents?
2. What is the relationship between problem drinking and other forms of social problem behavior during the adolescent years?
3. What environmental factors are associated with the development of adolescent problem drinking?
4. What personality factors are related to the development of adolescent problem drinking?

Epidemiology Of Problem Drinking Among Adolescents

Most of the recent national surveys that include data on adolescent drinking practices focused on providing period prevalence data, not on problem drinking specifically. For example, in each of a series of six household surveys of the general population aged 12 to 17 taken between 1971 and 1977, slightly more than one-half of the responding adolescents reported they had used alcohol during the past year and about one-third reported some drinking within the month before the survey (Abelson and Atkinson 1975; Abelson and Fishburne 1976; Abelson et al. 1977; Josephson 1974*a,b*; Josephson et al. 1972). In addition to the period prevalence estimates afforded by these household surveys, a series of five annual surveys of the Nation's high school seniors—1975 to 1979—has consistently shown that on average more than 9 of 10 high school seniors have cent reported drinking during the year before the survey—the annual prevalence rate, about half reported recent weekly use, and about month (Johnston et al. 1977*a,b*, 1979).

Both the most recent household survey of 12- to 17-year-olds (Abelson et al. 1977) and the most recent national survey of high school seniors (Johnston et al. rates for alcohol use are higher than the corresponding prevalence rates for any other drug, including tobacco. These prevalence measures have shown that alcohol is the most widely used drug among adolescents.

Thus, although these surveys have afforded consistent and convergent estimates of the prevalence of adolescent drinking, generally they have not reported the relationships between their frequency-based prevalence measures and measures of: (1) quantities of alcohol drunk; (2) the degree to which negative consequences of drinking are reported; (3) frequency with which drunkenness is reported—as opposed to drinking without drunkenness; or (4) other measures of general deviant behavior. They have not, therefore, furnished a systematic basis for estimating the extent of problem drinking on any basis other than a frequency basis—for example, on the basis of "daily or near daily drinking."

However, one major national survey of adolescent drinking practices has furnished such a basis for estimating the rate of adolescent problem drinking (Rachal et al. 1976). This 1974 national study of more than 13,000 junior and senior high school students' fied two-stage probability sample of all students in grades 7 through 12 in the 48 contiguous States and the District of Columbia. The data from this survey are particularly rich in detail, including measures of frequency of drinking, quantities drunk, negative consequences of drinking, indexes of problem drinking, measures of other drug use, general deviant behavior, and a variety of psychosocial measures (Donovan and Jessor 1978*a*).

In frequency of drinking, Rachal et al. asked adolescents how much they usually drank ". . .at one time, on the average. . .." They found that approximately 23 percent of their total group of 13,021 adolescents reported drinking at least once a week; 32 percent at least once a month but less than once a week; 17 percent less than once a month but more than once a year; 9 percent less than once a year; and 19 percent reported no drinking of beer, wine, or liquor. In quantity drunk, Rachal et al. found that 26 percent of their sample reported drinking one or fewer drinks for each drinking occasion, 31 percent reported two to four drinks each time, and 24 percent reported consuming five or more drinks per occasion.

Using a combined quantity-frequency index of drinking behavior, Rachal et al. found that about 11 percent of the adolescents drank at least once a week and consumed five or more drinks on the average occasion. An additional 14 percent drank at least once weekly and consumed two to four drinks each time, or drank three to four times monthly and five or more drinks at each occasion.

Rachal et al., like the Jessors and their colleagues, based their definition of problem drinking on two factors: (1) the frequency of drunkenness in the past year; and (2) the number of life areas—friends,

school, dates, police, family, and driving—in which there were drinking-related negative consequences. Rachal et al. defined students who reported drunkenness four or more times in the past year or who reported negative consequences in two or more life areas as problem drinkers. Of their 13,122 subjects, 27.8 percent were classified as problem drinkers, compared with 45.0 percent nonproblem drinkers, 9.2 percent minimal drinkers, and 18.6 percent abstainers.

Donovan and Jessor's (1978*a*) analysis of these data showed how three alternative definitions of problem drinking affected the percentage of students classified as problem drinkers. Their first definition of problem drinking involved more stringent criteria than that used by Rachal et al. A problem drinker was someone who had been drunk at least six times in the past year or had experienced negative consequences two or more times in the past year in at least three of the five life areas. This definition resulted in classifying approximately 19 percent of the 13,122 adolescents as problem drinkers. Donovan and Jessor's second definition of problem drinking was based on the frequency of drunkenness alone. Using the criterion of being drunk at least twice a month during the past year, they found that approximately 9.4 percent of the total sample would be classified as problem drinkers. The third Donovan and Jessor definition was based on the negative consequences criterion alone. To be considered a problem drinker, a person must have experienced drinking-related negative consequences at least twice in any one of the five life areas, with at least one such experience in an additional area. Using this definition, the problem drinker prevalence rate was 8.9 percent across the total sample.

Another analysis of Rachal's data also showed that not only does the percentage of students who use alcohol increase dramatically with advancing age, so does the percentage that drinks frequently and in large quantities (Harford and Mills 1978). Harford and Mills also compared the frequency and quantity data from the adolescents in this survey who reported drinking at least once per month with comparable data from a household survey of Boston adults that was also done in 1974. They found that while the frequency of drinking increases gradually with age well into the adult years, the mean number of drinks consumed on each occasion rises to a total of nearly six drinks (males) and more than four drinks (females) by age 16-17 and declines thereafter. This pattern suggests one particularly troublesome aspect of adolescent drinking; it appears to be unusual in comparison with other age groups not so much in frequency of drinking as in quantity consumed each time.

Perhaps most significantly, the rates of drunkenness and problem drinking among male drinkers in 12th grade have been found to be about seven times the rate among male 7th grade drinkers; the corresponding ratio among females is about five to one (Donovan and Jessor 1978*a*; Rachal et al. 1975, 1976; U.S. Department of Health, Education, and Welfare 1978). Finally, in one of their rare references to the number of drinks consumed per occasion—as opposed to their

emphasis on frequency-based prevalence measures—the most recent annual survey report on the Nation's high school seniors (Johnston et al. 1979) indicates that there has been some increase in heavy drinking among high school seniors during the past 5 years. Thirty-seven percent of the senior class of 1975 reported (in 1975) that they had consumed ". . .five or more drinks in a row. . ." on some occasion during the 2-week period preceding that survey. This percentage has risen steadily to 42 percent among seniors in 1979.

Several recent reviews (Blane and Hewitt 1977; Blum and Richards 1979; Demone and Wechsler 1976; U.S. Department of Health, Education, and Welfare 1978) and surveys based on samples of convenience (Blackford 1977; Engs 1977; Wechsler and McFadden 1976; Wechsler and Thum 1973) have suggested that the historical gap between the levels of male drinking and female drinking during the adolescent years that was reported in many earlier studies (Cahalan et al. 1969; Forslund and Gustafson 1970; Maddox and McCall 1964; Straus and Bacon 1953) is narrowing or has even disappeared.

Data from the recent nationwide household and school-based surveys are all consistent with the suggestion of increasing equality between the sexes. Regarding minimal or infrequent drinking, lifetime prevalence and light drinking is only slightly more prevalent among male adolescents. However, recent major surveys make it clear that more frequent, heavier, and problem-level drinking practices are more prevalent among adolescent males than females (Abelson et al. 1977; Donovan and Jessor 1978*a*; Johnston et al. 1977*a*; Wilsnack and Wilsnack 1978). For example, this pattern of near equality between the sexes at lower frequency-of-drinking levels but increasing differences at higher frequency-of-drinking levels is clearly shown in Johnston et al.'s most recent (1979) survey of high school seniors. By the senior year in high school, lifetime prevalence figures are nearly equivalent: 94 percent for males and 92 percent for females. However, 77 percent of the male seniors had used alcohol in the month preceding the survey compared with 67 percent of the female seniors; and 9.6 percent of the male seniors reported daily use of alcohol, while only 4.0 percent of the female seniors said they drank daily (Johnston et al. 1979). Similarly, 15 percent of all males in the nationwide survey of 7th through 12th graders (Rachal et al. 1975) were classed as heavy drinkers—drinking at least once a week with five or more drinks per occasion—compared to only 6 percent of the females.

All three alternative definitions of problem drinking that Donovan and Jessor (1978*a*) applied to Rachal's data resulted in ratios of approximately three male drinkers for every two female problem drinkers in their total sample of 7th through 12th graders. Although quite different criteria for problem drinking were used, both Globetti (1972) and Smart and Gray (1979) also have found that more high school males than females were problem drinkers. Analyses in problem drinking between the sexes widens with increasing age. While approximately equal percentages of both male and female 7th graders—5 percent and 4

percent, respectively—were classed as problem drinkers, approximately twice as many 12th grade boys as girls—40 percent and 21 percent, respectively—were considered problem drinkers (Donovan and Jessor 1978*a*; U.S. Department of Health, Education, and Welfare 1978).

In addition to the age and sex differences, heavy drinking has also been shown to vary according to several other demographic variables. When one considers the whole adolescent group, substantial agreement exists that the South has the fewest heavy drinkers while the Northeast and North Central regions' rates are highest (Abelson et al. 1977; Rachal et al. 1976). However, regional differences in alcohol use were not reported in the most recent survey of young men (O'Donnell et al. 1976). This finding is similar to the regional pattern obtained in Cahalan's older national study of young adult men (Cahalan et al. 1969).

Among high school seniors, the prevalence of weekly alcohol use is slightly lower among those who are planning on 4 years of college—19 percent—than among those who are not college-bound—24 percent. This slight differential increases with increasing frequency of drinking, so that daily drinking is only half as prevalent among the college-bound—4 percent—as it is among those not planning on college—8 percent (Johnston et al. 1977*a*).

Rachal et al.'s data also show that there are some ethnic group differences in heavy drinking rates (1975). In their total sample of 7th to 12th graders, about twice as large a proportion of whites as blacks were heavy drinkers. In Donovan and Jessor's (1978*a*) analyses of these data, problem drinking rates, by their primary definition, were far lower for blacks than for Anglos, Spanish Americans, or American Indians. These ethnic group differences were particularly evident among males.

Although their samples were not representative of the Nation, ethnic group differences have also been reported by others (Brunswick and Tarica 1974; Riester and Zucker 1968) but disputed by some others (Cahalan et al. 1969; Globetti and McReynolds 1964). There are also recent indications that while some minority ethnic group adolescents are much more likely to use substances other than alcohol than are Anglos, they are not more likely than Anglos to use alcohol frequently. In their study of 12- to 17-year-old Hispanic adolescents living in East Los Angeles public housing projects, Padilla et al. (1979) found that the weekly prevalence of inhalant abuse was 13 times the monthly prevalence rate found in a national household sample of 12- to 17-year-olds (Abelson and Fishburne 1976), and the weekly prevalence of marijuana use was about twice the national sample's monthly rate. In contrast, their weekly drinking rate was less than the monthly drinking rate in the national sample. Also, in the four national household samples of this age group, "current drinking" rates—weekly and monthly drinking—were substantially lower for nonwhite than for white adolescents (Abelson et al. 1977).

This review of the literature relating to the epidemiology of adolescent problem drinking shows that drinking is widespread among adolescents and that drinking can be considered a significant problem

for 10 to 20 percent of them. Also, the data reveal that the probabilities of being an adolescent problem drinker are related to age, sex, ethnic group, and regional variables. With this perspective on the extent and distribution of problem drinking among adolescents, the discussion focuses on other social problem behaviors that are associated with problem drinking in this age group.

Relationships Between Problem Drinking And Other Problem Behaviors In Adolescence

Perhaps the most obvious question concerns the relationships between adolescent problem drinking and the use of other even more illicit drugs. Several analyses of these relationships have recently appeared, some explicitly involving measures of problem drinking and others involving precocity of initial drinking. Precocity may be determined by establishing when either the transition from nondrinker to drinker or the transition from beer and wine to initial use of hard liquor occurred.

Most recently, Donovan and Jessor (1978*b*) and Jessor et al. (1980) analyzed the relationship between drinking and both problem drinking and marijuana use. Jessor et al.'s analysis of data on more than 10,000 junior-senior high school students from the previously cited 1974 national survey showed that one of their indexes of problem drinking—number of times drunk during the past year—shared 37 percent of its variance among males and 42 percent of its variance among females with their measure of involvement with marijuana.

Donovan and Jessor's (1978*b*) analysis of the same nationwide 1974 survey data showed that illicit drug use was almost nonexistent among 7th to 12th graders who were not drinkers. However, more than 97 percent of those who used illicit drugs in their massive sample were also current drinkers. Regarding marijuana use, for example, they found that only 1 percent of the abstainers, 6 percent of the minimal drinkers, 28 percent of the current nonproblem drinkers, and 77 percent of the problem drinkers had used marijuana. Thus, the researchers found problem drinkers to be almost 3 times as likely as current drinkers, 12 times as likely as minimal drinkers, and about 75 times as likely as abstainers to use marijuana.

In other analyses involving problem drinking, marijuana use, and illicit drugs other than marijuana, Donovan and Jessor (1978*b*) persuasively suggested that not only is the use of alcohol a prerequisite to marijuana use, as Kandel and her colleagues have shown, but also that problem drinking may be a prerequisite to the use of other illicit drugs such as psychedelics, amphetamines, barbiturates, cocaine, and heroin. They recognize that a conclusive test of this hypothesis will require longitudinal data, because their analyses were based on cross-sectional data.

In a separate study of a different sample of adolescents who were followed longitudinally over 4 years, Jessor and Jessor (1975) found that the precocity with which the abstainer-drinker transition was made was directly related to subsequent marijuana use, sexual intercourse, and problem drinking. The percentage of students who were problem drinkers at the end of the study was highest among students who made the transition from abstainer to initial drinker status earliest. Among students who made the transition from abstainer to drinker at successively later times, progressively lower percentages reported that problem drinking, marijuana use, and sexual intercourse had occurred by the time the study ended. The percentage was lowest among the students who had remained nondrinkers through the end of their study.

In a series of analyses which also suggest that drinking plays a significant developmental role vis-a-vis illicit drug use, Kandel and her colleagues have discerned at least four progressive stages of drug use in their samples of New York State high school students. Use of beer and/or wine was a necessary first step, followed by cigarettes or hard liquor, marijuana, and other illicit drugs (Kandel 1975, 1978; Kandel et al. 1978; Single et al. 1974).

In addition to these findings, several other studies have reported sizable relationships between the use of illicit drugs and whether, how often, or how much adolescents drink (Block and Goodman 1978; Braucht 1974; Jessor et al. 1973; Johnston 1973; Kandel and Faust 1975; Kandel et al. 1976; Margulies et al. 1977; National Commission on Marijuana and Drug Abuse 1972; Prendergast and Schaefer 1974; Single et al. 1974; Tennant et al. 1975; Wechsler 1976; Wechsler and Thum 1973; Whitehead and Cabral 1975; Zucker and Barron 1973; Zucker and DeVoe 1975).

Turning to other forms of social problem behavior, several studies have also found significant relationships between antisocial or delinquent behavior and adolescent drinking, particularly at the heavier levels of drinking (Braucht 1974; Demone 1973; Donovan and Jessor 1978*a*; Globetti 1972; Jessor and Jessor 1977; Johnston 1973; Stacey and Davies 1970; Wechsler and Thum 1973; Zucker and Barron 1973; and Zucker and DeVoe 1975). In addition to being related to delinquent-antisocial behavior, illicit drug use, and sexual behavior, heavy drinking has also been found to be related to (1) poor school performance (Braucht 1974; Donovan and Jessor 1978*a*; Jessor and Jessor 1975; Smart and Gray 1979); (2) problem behavior in the classroom (Braucht 1974); (3) interaction problems within the family (Zucker and Barron 1973; Zucker and DeVoe 1975); (4) the number of classes cut (Kandel et al. 1978); and (5) higher dropout rates (Mandell et al. 1962).

The studies reviewed above show that adolescent problem drinking is related to a patterned constellation of behavioral correlates. This finding is fully consistent with the pattern of behaviors that Jessor recently (1979) found to be related to adolescent marijuana use. A general syndrome of unconventional, nonconforming, social problem behaviors seems prevalent among a select group of adolescents in

which precocious initial drinking, problem drinking, marijuana and other illicit drug use, precocious sexual behavior, delinquent behavior, problem school behavior, and other antisocial behavior patterns are component parts. With this perspective on the behavioral syndrome in which adolescent problem drinking is embedded, the question arises of the environmental factors associated with adolescent problem drinking.

Environmental Factors Associated With Adolescent Problem Drinking

In analyses of their longitudinal data across the 4 high school years, Jessor and Jessor (1977) found that several self-reported (perceived) environmental variables were related to problem drinking for both males and females. These variables were less compatibility between parents' and friends' expectations, greater influence of friends compared with parents, less parental disapproval for problem behavior models, and greater perceived prevalence among peers. A multiple linear combination of these perceived environmental variables accounted for slightly more than 20 percent of the variance in problem drinking status.

Perceived environmental variables were also consistently significant as discriminators between problem and nonproblem drinkers, both males and females, in Donovan and Jessor's national sample study (1978*a*). The differences between problem and nonproblem drinkers were consistently significant for males and females and were manifested across all three of their alternative definitions of problem drinking. Specifically, problem drinkers perceived less compatibility between their friends' and parents' expectations, attributed relatively more influence to their friends than to parents, and perceived more positive models and approval of drinking than did nonproblem drinkers. A set of five perceived environmental variables accounted for approximately twice as much variance as did a set of four personality variables in predicting three indexes of problem drinking. The five included (1) problem drinking status (approximately 20 percent versus 10 percent); (2) number of times drunk (approximately 31 percent versus 15 percent); and (3) total number of negative consequences of drinking (approximately 12 to 15 percent versus 6 to 7 percent). When both environmental and personality sets of predictors were combined, the environmental variables had greater predictive power than the personality variables. For example, in the analysis predicting problem drinker status, friends' models for marijuana use and friends' models for drinking entered the equation before any of the three personality system measures.

In addition to these findings regarding adolescent problem drinking, environmental factors related to the transition from abstainer to drinker have been investigated rather extensively. Given the relevance of the age drinking began to eventual levels of problem drinking, the studies

focusing on the environmental factors associated with early drinking will be reviewed.

Examining predictions of initial drinking from perceived environmental variables in their 4-year longitudinal study, Jessor and Jessor (1975) found that those who remained abstainers throughout their study perceived themselves to be in an environment that provided little parental and peer approval of and opportunity for drinking. Their situation can be contrasted with the group—whose members were more often problem drinkers—that made the earliest transition to drinking and scored highest on the approval and opportunity variables.

Jessor and colleagues (Donovan and Jessor 1978*a*; Jessor and Jessor 1975, 1977) interpreted their findings as consistent with a general developmental trend away from conventionality during adolescence. The pattern of environmental correlates was associated with developmental shifts toward less compatibility between parents and friends and greater influence of friends relative to parents. These findings suggest that young problem drinkers have loosened their parental ties and are oriented more toward their peers than nonproblem drinkers are. Donovan and Jessor (1978*a*) concluded that problem drinkers perceive that they have greater approval, more models, and increased pressure for drinking than the nonproblem drinkers. Thus, they experience more social support and probably more opportunity for drinking.

Other findings consistent with the pattern of relatively less parental influence and less compatibility between the adolescents' parents and their friends are found in the analyses of Kandel et al. (1978). They examined the relative influence of parents and peers and the extent to which these two sources of influence overlap regarding initial use of hard liquor. They found that parents strongly influence hard liquor initiation by acting as role models. The importance of parental modeling is underscored by their data. Eighty-one percent of families in which both parents drank hard liquor produced children who drank hard liquor; conversely, 72 percent of the families in which the parents abstained had abstaining children.

Kandel et al. also found that peer behavior was important in predicting hard liquor use. In fact, the most important variable in predicting initial use of hard liquor was the degree of adolescent involvement in peer activities such as getting together with friends, dating, attending parties, or driving around.

Kandel et al. suggested that the relative predictive powers of the various indicators of peer behaviors indicate that peer modeling and attitudes about drug use may be a more important source of influence than use by one friend. In their analysis of the relative influence of peers and parents, Kandel et al. found that peer influences were much more powerful than parental influences in predicting initial hard liquor use.

In other analyses of the age of initial drinking, Margulies et al. (1977) found that parents and peers had three times more influence on females than on males. In contrast, personal attitudes and involvement

in political and delinquent behaviors were two to four times more important for males than for females. In an analysis that included both sexes, the influence of peers proved to be increasingly more powerful for older adolescents, while parental influence remained at essentially equivalent levels throughout the high school years.

Some results reported by Forslund and Gustafson (1970) also suggest that the pattern of imitation of drinking behavior is a sex-linked phenomenon, although their specific findings were different. Forslund and Gustafson found that mothers' drinking patterns were correlated with those of both their sons and daughters, while fathers' patterns of drinking were correlated only with their daughters' drinking.

Examining The Process Of Adolescent Problem Drinking Within The Family

All of the preceding findings suggest that the acquisition of drinking behavior is a developmental phenomenon that starts in the home for most youth and then progresses to a more peer-controlled context. However, as Zucker (1976) observed, there have been few efforts to conceptually outline the mechanisms through which parental influences systematically produce differences in children's drinking patterns.

Zucker's theoretical model delineates a six-level process of indirect and direct parental and family influences. The first level includes traditional socioeconomic and sociocultural influences that are considered to be transmitted through the behavior, ideology, and values of the parents. The second and third levels focus on the parents as an interacting dyad and as separate individuals, respectively. The fourth level includes peer influences; the fifth is concerned with the child's personality. Finally, the child's actual drinking behavior comprises the sixth level of Zucker's model.

Within this framework, Zucker and his colleagues (Zucker and Barron 1973; Zucker and DeVoe 1975) have examined the influences of the familial environment, parental characteristics, and parental behavior on adolescent drinking behavior. Zucker and Barron (1973) found that both mothers and fathers of heavier drinking and problem-drinking boys also drank heavily, were more antisocial, and utilized social isolation and deprivation as disciplinary techniques. The fathers' worries about their own drinking were negatively related to their sons' problem drinking, whereas the mothers' worries about their own drinking were positively related to their sons' drinking. The boys who drank heavily felt their fathers were more emotionally distant, unrewarding, and uncaring about their achievements.

Zucker and DeVoe (1975) found that adolescent girls' heavy drinking was related to several maternal characteristics. Mothers of heavier drinking girls were heavier drinkers themselves and were characterized as having an aggressive sociability personality style. They utilized social

isolation and withdrawal of praise or affection to influence their daughters' behavior. Fathers' physical absence and drinking problems were related to daughters' heavier drinking. Thus, they found that heavier drinking among girls was related to a pattern of psychological or physical parental absence. Thus, the studies of Zucker et al. found the family environments of problem drinkers to be harsher, more negative in feeling tone, more likely to feature tension-filled interactions, and to be characterized by a lack of parental involvement.

Zucker (1979) suggests that the above findings and those of Jessor et al. (1968) point to major disturbances in three areas among those families that produce adolescent problem drinkers: (1) parental deviance in personal behavior and heavier drinking; (2) parental disinterest and lack of involvement; and (3) lack of positive parent-child interaction, affection, and nurturance. Zucker considers these familial environmental conditions to have an indirect influence on later adolescent drinking behavior. He argues persuasively that evidence from other research (Alexander and Campbell 1967; Kandel 1973) suggests that later drinking is more directly influenced by peer behavior.

In a sample of middle class high school students, Prendergast and Schaefer (1974) found that lax maternal control and perceived rejection and psychological tension in the relationship with the father accounted for 46 percent of the variance in frequency of drinking. Lax maternal control and perceived paternal rejection also accounted for 34 percent of the variance in frequency of drunkenness. Thus, Prendergast and Schaefer found disturbances in two of the three areas of family disturbance suggested by Zucker (1979).

Smart et al. (1978) and Smart and Gray (1979) have identified environmental variables that are concurrently but not predictively associated with frequency of drinking, average alcohol consumption, self-reports of drinking 'highs,' and frequency of drunkenness. Smart and his colleagues found that approximately 30 percent of the variance in their measures of drunkenness and/or problem drinking was shared with environmental variables such as drinking in cars, drinking away from home, and drinking without parents' knowledge.

Finally, in their analyses of data collected on a large sample of 7th to 9th graders in Los Angeles, Huba et al. (1979) found that frequent drinking was related to several social environmental variables. The set of associated factors in the social environment includes having many friends who supplied alcohol, knowing many adult drinkers, frequently getting together with friends, driving around with friends, having friends who are not liked by one's parents, and having many friends who are also drinkers.

Although the studies reviewed show that there are several parental, peer, and other environmental factors that are clearly associated with adolescent problem drinking, even the best available analyses involving combinations of these factors leave much of the phenomenon unexplained.

In addition, it is evident from several studies that some specific environmental variables are differentially related to problem drinking—depending on the sex, age, and other individual characteristics of the adolescents in question. Finally, it should be clearly recognized that these studies do not permit an unequivocal interpretation about whether these environmental factors are (1) simply correlates of problem drinking; (2) causes of problem drinking; (3) consequences of problem drinking; or (4) both causes and consequences of problem drinking. The fourth possibility is one that has not been systematically entertained by available research. In its most general form it would consider environmental factors and individual differences as mutually interdependent factors in a dynamic pattern of reciprocal influence.

With the knowledge of the environmental context for adolescent problem drinking that these studies afford, the question of what personality factors are associated with problem drinking will now be considered.

Personality Measures Associated With Adolescent Problem Drinking

In an older review (Braucht et al. 1973), a summary of the personality correlates of adolescent problem drinkers prominently featured the characteristics of aggressiveness, impulsiveness, low self-esteem, high anxiety, depression, and a general lack of success in the attainment of life goals. Because most of the work that Braucht et al. reviewed was based on college-aged samples, comparing their results with more recent studies of younger subjects may be helpful.

Some of this more recent research has seemed to corroborate the presence of psychopathological characteristics among adolescent drinkers. For example, Wechsler and Thum (1973) found more personal problems among their sample of heavier drinkers. In a sample of black youth from Harlem, Brunswick and Tarica (1974) also found that both personal worries and symptoms of anxiety characterized drinkers of both sexes. In a third setting, markedly different from both of those above, Globetti (1972) found indications that problem drinkers were alienated from important social groups such as their families and churches.

In general, however, most of the more recent research on junior/senior high-school-aged youth does not indicate that personality variables with psychopathological connotations play highly influential roles in the development of adolescent problem drinking. For example, Jessor and Jessor (1977) found that the frequency of drunkenness was not significantly related to their measures of personal alienation, self-esteem, or internal-external control locus.

Yet, recent research on junior and senior high school samples has shown that four personality variables are consistently but not strongly

related to problem drinking. In their analyses of adolescent problem drinking in a national sample study, Donovan and Jessor (1978*a*) found statistically significant differences between problem and nonproblem drinkers on all eight of their personality measures. However, for both sexes only about 10 percent of the variance in the problem drinking criterion was accounted for by four personality variables. As a group, problem drinkers (1) were personally more tolerant of deviant behavior; (2) attached less importance to religion; (3) had lower expectations of achieving academic success; and (4) valued independence more than academic achievement. This set of four personality measures accounted for a greater percentage of the variance in the criterion of number of times drunk in the past year—14 percent for males and 15 percent for females. However, the four variables accounted for a lower percentage of the variance in regard to drinking-related consequences—7 percent for males and 6 percent for females.

Thus, although Donovan and Jessor's large sample sizes assured statistically significant tests for the personality factors, they accounted for a small part of the variance in the key problem drinking measures—typically less than half of the environmental measures. However, in male ethnic subsamples, either personal tolerance for deviance or the students' expectations for academic achievement are highly significant variables in predicting the number of times they had been drunk in the past year. These two variables played even stronger roles among female subsamples, particularly among black and Asian American females. Given the large, nationally representative sample involved, these findings must be viewed as credible evidence that several personality variables are weakly associated with problem drinking among the American junior/senior high school population. Also, the variables affect the various sex-ethnic subpopulations differently.

Jessor and Jessor (1977) used similar variables based on the same social-psychological theoretical framework with a different sample—fourth year data from their 4-year longitudinal sample. They found that the number of times the adolescents reported being drunk for both sexes was significantly related to four characteristics. They are: (1) lower personal value for academic achievement; (2) higher tolerance for deviance; (3) more positive reasons for drinking; and (4) more positive reasons relative to negative drawbacks for drug use.

In their analysis of personality differences that specifically compared problem drinkers with nonproblem drinkers within each sex, however, the Jessors (1977) found that the two drinking groups differed only on tolerance of deviance, positive-negative drinking functions, and a measure regarding sexual behavior. The differences between adolescent problem drinkers and nonproblem drinkers were examined in the later report (1977). It also showed that only 14.4 percent of the variance in this dichotomy was accounted for by personality measures.

In addition to the above findings relating to personality factors associated with adolescent problem drinking per se, several investigations have attempted to identify personality factors associated with

early drinking and/or early drinking of hard liquor as opposed to beer or wine. The findings from some of these investigations suggest that personality factors have no or little relationship to the beginning of drinking compared with more influential environmental and behavioral factors (Kandel et al. 1976, 1978).

The Jessors' (1977) findings from their 4-year longitudinal study, however, showed that the age at which drinking begins was related to several personality factors. They analyzed their data on the initiation of drinking in two ways: (1) predicting when drinking would start from data collected at the beginning of their 4-year study; and (2) comparing groups of adolescents who made the transition from abstainer to drinker status at various times on measures collected at the end of the study.

Analyses of the first year's data revealed that six personality variables were predictive of when drinking would begin. Those adolescents who made the earlier transitions to drinker status generally placed lower value on achievement, placed higher value on independence relative to achievement, had lower expectations of achievement, were more tolerant of deviance, had lower religiosity scores, and felt that drinking had fewer drawbacks for them. Based on personality measures collected in the fourth year, the six personality variables were significantly related to the time when drinking began. In addition, their five time-of-onset groups were shown to differ on two additional personality measures: value on independence and alienation. Both were generally higher for those making the earlier transitions.

These results are given perspective by the finding that for all the adolescents in their longitudinal study—regardless of drinker status—the developmental trend over time was toward their holding lower values for achievement, higher values for independence, greater tolerance of deviance, and lower religiosity.

The Jessors' research shows that the personality characteristics of adolescent drinkers correspond to a later developmental level than the abstainers' pattern of personality characteristics. This pattern holds even more for those who become drinkers earlier than later. They cautiously interpreted their pattern of findings as consonant with the conclusion of Stacey and Davies' earlier review (1970), "Consumption of alcohol at a very early age. . .may. . . indicate mere precocity in development. . .."

The data in the Jessors' (1977) study were collected and analyzed thoroughly—for example, the multivariate analyses were replicated across sexes and across sex by grade cohorts. In addition, similar results were found for other problem behaviors. Thus, these findings must be viewed as rather well established, at least within the limits of their sample, the period in which their study took place, and other constraints of their approach.

Summary

The research reviewed here demonstrates a substantial convergence of evidence regarding adolescent problem drinking. In terms of lifetime, annual, and 30-day prevalence rates, alcohol is the most widely used drug among adolescents. Depending on the criterion used, drinking constitutes a significant problem behavior for 10 to 20 percent of the Nation's adolescents. Males and older adolescents are more likely to be problem drinkers than are females and younger adolescents. There also seem to be differential rates of heavy drinking among adolescents by region of the country. The South has the lowest rate and the Northeast and North Central regions the highest. Differences also occur among racial and ethnic groups although these differences are not as firmly established as the age and sex differences.

This body of research also shows that adolescent problem drinking is associated with several parental, peer group, and other environmental factors. Compared with those who are not problem drinkers, adolescent problem drinkers are more likely to be in an environmental context in which (1) they feel more disagreement between what their parents expect of them and what their friends expect of them; (2) their friends seem to have relatively more influence on them compared with the influence their parents exert; (3) there is less parental disapproval for their drinking; (4) there are more peers who model problem drinking and other problem behavior for them; (5) there is more peer approval of their drinking; (6) their parents are less involved with them and their lives; (7) their parents are heavier drinkers themselves; and (8) their parents are less positive or affectionate toward them.

Several environmental factors are also related to the precocity with which adolescents make the transition from naive nondrinking status to the status of initial drinkers. The relevance of this lies in the finding of longitudinal analyses that the rates of problem drinking are highest among those who make this transition earliest. Most of the literature in this area is consistent with the concept of adolescent problem drinking as a developmental phenomenon whose early roots lie more in the family context and whose most powerful later influences are to be found in the peer group context.

In addition to these environmental correlates, there are also several personality characteristics that are associated with adolescent problem drinkers. Recent research has shown that, relative to nonproblem drinkers, problem drinkers (1) are more tolerant of deviance; (2) attach less importance to religion; (3) are more apt to weigh the positive aspects of drinking more heavily than negative aspects; (4) place lower personal value on academic achievement; (5) place more value on self-determination and autonomy from parents; and (6) hold lower expectations of achieving academic success. Some studies also have found problem drinkers to have more personal problems and to be more alienated, although these findings are not as well established.

In addition to these epidemiological, environmental, and personality correlates, adolescent problem drinking has been found to be a component part of a syndrome of progressive involvement in social problem behaviors. Other problem behaviors that are part of this syndrome include failure to progress in school, problem behavior in the classroom, cutting classes, truancy, dropping out of school, marijuana use, use of other illicit drugs, precocious sexual behavior, and delinquent behavior.

With all of this knowledge of the epidemiological, environmental, personality, and behavioral correlates of adolescent problem drinking, there are still many important unknowns. First, the results of several empirical studies in this field suggest that the concept of "the adolescent problem drinker" is not a unitary, homogeneous concept—that there is more than one type of adolescent problem drinker (Braucht 1974; Donovan and Jessor 1978*b*). In this regard, it is not known whether various types of adolescents become problem drinkers by way of *different* developmental pathways, as has been hypothesized by Gorsuch and Butler (1976) in the specific field of adolescent substance abuse and by Block (1971) in the general field of adolescent development.

A closely related kind of question that is of major interest to those who are attempting to implement effective primary or secondary prevention programs has also been identified (Braucht et al. 1973). How can adolescents who have become involved in problem drinking by different developmental pathways be influenced away from greater involvement in problem drinking and other social problem behavior? And, are different influences (e.g., various types of prevention programs) differentially effective with different types of adolescent problem drinkers?

A third kind of question facing this field involves the issue of what becomes of the various types of adolescent problem drinkers in later years. For example, what types of adolescent problem drinkers "mature out" of their problematic involvement with alcohol and what types go on to deeper and more chronic problem drinking in their adult years? And, what are the critical psychosocial factors associated with these later transitions?

To provide answers to these kinds of questions, researchers in the field of adolescent drinking should benefit from a growing body of conceptual and theoretical work that is aimed at using a transactional concept of adolescent drinking and other naturally occurring social problem behaviors (Braucht 1980). A transactional concept would view the person and the environment as mutually interdependent factors in a dynamic pattern from several other salutary trends which are already evident in the psychosocial research of the past decade or so. Specifically, greater knowledge will be built (1) on a foundation of ever more thoughtful, theory-based, theory-testing research; (2) by continuing concern with providing comprehensive assessments of personal, environmental, and behavioral constructs that are embedded in a

transactional theoretical framework; (3) by using longitudinal research designs appropriate for testing the developmental issues that are involved; (4) by using representative designs built on large-scale samples of these phenomena that occur in real life; and (5) by increasing use of sophisticated multivariate data analysis techniques.

Research featuring these desirable characteristics has already yielded the solid foundation of knowledge reviewed here and has brought the major challenges for the future into relief. With the increasing sophistication of researchers in this field, it may be confidently expected that the next few years of research will result in a much richer portrayal of how adolescent problem drinking develops and changes over the life span.

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Chapter 6

Environmental Influences in Adolescent Drinking

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Abstract

Many factors contribute to the initiation and continuation of drinking by adolescents; while many of the variables studied are categorized with the psychological area; others relate to the availability of alcohol in society and the broader sociocultural fabric of population subgroups with different traditions concerning the use of alcohol. In this chapter, previously reported findings in the literature on the relationship between environmental factors and adolescent drinking are reviewed. These environmental factors include regional variations and size of community, the physical availability of beverage alcohol, peer drinking models, and parental drinking patterns. Relevant data obtained from a recent national survey of high school students in the U.S. are presented. These findings make it clear that understanding the circumstances in which adolescents consume alcohol is important not only in terms of predicting heavier consumption levels, but in directing attention to features of the environment which may increase understanding. The conceptual advantage of identifying relevant drinking contexts is twofold: (1) it directs attention to critical factors in the immediate environment which influence the level of consumption; and (2) it directs attention to antecedent conditions which structure the environment of the adolescent in terms of movement toward and away from settings in which alcohol is present and, in the case when it is present, the nature of the setting (i.e., at home on special occasions, at teenage parties). These data indicate that social control on teenage drinking levels are more likely to be exercised when parents and other adults are present. The structure of these controls and their efficacy need to be studied including the critical variables in peer contexts which influence heavier consumption. Research is necessary to determine which factors involved in teenage parties play a critical role in the level of alcohol consumption.

Introduction

Many factors contribute to the initiation and continuation of drinking by adolescents. While many of the variables studied fall within the psychological area, others relate to the physical availability of alcohol in

society and the sociocultural characteristics of population subgroups with different traditions concerning the use of alcohol. This paper reviews previously reported findings in the literature on the relationship between environmental factors and adolescent drinking and presents relevant data obtained from a recent national survey of high school students in the United States (Rachal et al. 1980).

An assessment of the role of environmental factors in adolescent drinking is complicated in several ways. First, a conceptually adequate definition of the environment is not easily specified. According to Jessor and Jessor (1973), ". . .the environment must be accepted as a flux continuously and differentially constituted depending on the purposes involved—that is, depending on the conceptual concerns of a discipline, the explanatory objective of a behavioral scientist, or the goal-oriented striving of a particular actor" (p. 804). Second, the multiplicity of environments is further complicated by their differential proximity to behavior. The degree of regional urbanization is conceptually more remote from drinking behavior than is the influence of the number of drinking companions in a specific context. Third, environmental factors act in concert with personality variables with respect to behavior, and often are mediated by persons acting in a particular context.

Despite these difficulties, it is important to identify factors in the environment which relate to and influence the frequency and level of alcohol consumption. Among these, the identification of significant drinking contexts is useful for several reasons. The behavior of an individual occurs with reference to others in a total situational context and a proper understanding of behavior requires an understanding of these contexts. Identifying significant drinking contexts also furthers the delineation of conceptual linkages between the environment and behavior and exposes more succinctly the antecedent networks of drinking behavior. That is, it directs attention to factors, both environmental and psychological, which support adolescent drinking.

The first part of the paper, then, focuses on the circumstances or contexts of adolescent drinking and their relationship to drinking patterns. The second part of the paper examines the contribution of other environmental factors to drinking behavior and to frequency of drinking in selected contexts. These environmental factors include regional variations and size of community, the physical availability of beverage alcohol, peer drinking models, and parental drinking patterns.

Adolescent Drinking Contexts

Surveys of adolescent drinking patterns indicate that most teenagers are introduced to alcohol at home in the presence of their parents (Davies and Stacey 1972; Maddox and McCall 1964). This finding is consistent with the fact that teenagers generally report home to be the major context for alcohol consumption (Chappel and Goldberg 1953;

Maddox and McCall 1964; Mandell et al. 1963). For example, in a survey of New York high school students 37 percent of the boys and 59 percent of the girls reported that "home" was the context in which they most often used alcohol. Approximately 22 percent of the boys and 21 percent of the girls drank at a friend's home, 17 percent of the boys and 21 percent of the girls at a bar, 16 percent of the boys and 4 percent of the girls at a secluded spot, and 8 percent of the boys and 3 percent of the girls in a car (Chappel and Goldberg 1953).

Despite the high percentage of teenagers who report drinking in the home relative to other contexts, other data suggest that the most commonly reported occasions on which students are likely to drink are at parties attended by peers and with no adult supervision (Maddox and McCall 1964; Sower 1959). Studies of the types of companions with whom adolescents typically drink indicate that adolescents are more likely to drink in the company of peers than with parents, relatives, or other adults.

In a survey of teenage drinking in Mississippi, Globetti (1964) reports that peers were the most frequent drinking companions among both frequent and occasional drinkers. Kane and Patterson (1972) in a survey of high school students in Kentucky found that 38 percent of the respondents most often drank with friends of their own age, 23 percent drank with older friends, 6 percent drank alone, and 32 percent drank with others including their parents. While caution must be taken in generalizing from limited geographical surveys, analyses of the 1974 national survey data on adolescent drinking patterns (Rachal et al. 1975) also have found that peer settings in which no adults were present (e.g., parties) were the most common drinking settings for high school students.

Studies also indicate that heavier or more frequent drinkers are more likely to report using alcohol in peer settings than in the family context. Maddox and McCall (1964) reported that for users the most likely occasion for drinking was at a party attended by peers and not supervised by adults, whereas for nonusers drinking occasions were most likely to be special events celebrated in the home or with adults present. When frequent drinkers were compared with infrequent drinkers in the survey of Kentucky high school students, it was found that frequent drinkers drank most often with friends (41 percent) and infrequent drinkers drank most often with others, including family members (44 percent) (Kane and Patterson 1972). Similarly, the 1974 national survey data indicate that the great majority (80 percent) of heavy drinkers drank "mostly" with peers whereas only 6 percent of the infrequent drinkers reported drinking mostly with peers. Furthermore, as drinking level increased, the proportion of subjects drinking mostly with peers also increased (Rachal et al. 1975).

There is also evidence to suggest that problems associated with drinking may be linked to situational factors. A study of 639 students in a Southern abstinence community found that students who drank with friends or alone were more likely to be problem users while those who

drank with parents or relatives were more likely not to be problem users (Globetti 1972). In a survey of 1,608 high school students in Ontario, it was found that scores on a problem-drinking scale were more strongly correlated with situational factors and those connected directly with drinking than other types of peer or parental influences (Smart and Gray 1979). Problem drinkers had their first drinks away from home and usually drank in cars. Other studies also indicate that teenagers whose early use of alcohol occurs with peers rather than parents may experience more problems with alcohol or with society in general. Two studies comparing the drinking patterns of delinquent youth with those of nondelinquent youth reveal that while the majority of nondelinquents took their first drink with parents or relatives and continued to drink predominantly with family members, delinquents generally took their first drink with friends and continued to drink predominantly with friends (MacKay et al. 1967; Pearce and Garrett 1970).

The studies discussed above have attempted to determine the percentages of teenagers who drink in various situations and to relate contexts of drinking to patterns of consumption. However, there are very few data on the frequency and amount of drinking that occurs in specific contexts and on the identities of drinking companions and sources of alcohol in each of these settings. In a survey of 1,321 students from 14 to 17 years old in Glasgow, Scotland, Davies and Stacey (1972) examined in detail the drinking behavior of adolescents in three types of settings: the home of parents or an adult relative, the home of a friend of the same age, and somewhere other than a home (i.e., at a dance, in a hotel or pub, outdoors, somewhere else). Most of the teenagers reported drinking at home (92 percent) but the amounts of alcohol consumed there were relatively small. Fewer teenagers but nevertheless a substantial proportion (71 percent) reported drinking in the home of a friend but consumed more alcohol than in the home setting. Fewer still (66 percent) reported drinking outside the home but consumed more alcohol than in either of the other two settings. The findings therefore indicate that while more students drink in the parental home than in other settings, drinking in the home is characterized by consumption of significantly less quantities of alcohol than in other drinking contexts.

The quantities consumed in each of the three settings studied increased progressively as a function of age. However, there was a noticeable shift, particularly among boys, from drinking in the home context to drinking away from home. For younger boys, age 14, most drinking takes place in the home, while for older boys, age 17, most drinking takes place away from home, although drinking in the home has become more frequent. A similar but less pronounced pattern was identified for girls. For both sexes the frequency of drinking in public houses increases with age while drinking outdoors in parks or streets decreases with age.

In the home settings parents were usually present (68 percent) and more likely to be the persons serving drinks (45 percent) than not (23

percent). Teenage peers were present on these occasions (43 percent) but less likely to serve alcohol (17 percent). Drinking in this setting appears to be mostly confined to "special occasions" for the younger teenagers. With increasing age, more drinking takes place on occasions reported as "not special." In the home of a friend, parents were less likely to be present (15 percent) while other adults were more likely to be present (40 percent) and serving drinks (32 percent). The major difference between this setting and that of the home was the predominance of teenage peers, 47 percent of whom served drinks. The picture that emerges is one of a young people's party in which adults play a secondary role. In settings other than a home, a pattern similar to that in the home of a friend was reported. Parents were least likely to be present (13 percent) whereas teenage peers predominated (67 percent).

These data provide support for the hypothesis that social controls for teenage drinking are most likely to be exercised in the home of parents where access to alcohol is generally under the supervision of parents or other adult relatives. Outside the parental home, drinking appears to be largely under the control of teenagers themselves. There is clearly a shift with age from drinking under parental control to drinking under peer control. Similar age trends have been identified among American youth.

As indicated earlier, the 1974 data (Rachal et al. 1975) indicate that the most common drinking setting for high school students was in peer settings with no adults present (e.g., parties). Twenty-eight percent drink "mostly" in such settings, 20 percent drank mostly at home with parents, and 3 percent drank mostly at parties supervised by adults. Further analyses of these data (Harford and Spiegler 1980) found that 51 percent of the students drink both at home and in peer settings, 36 percent drink only at home, and 13 percent drink only with peers. While the proportion of students who drank exclusively at home decreased with age, the proportion who drank both at home and with peers or exclusively with peers increased with age. The frequency of drinking and the amount of alcohol typically consumed by students who drank in both settings also increased with age. There were no age-related trends in the frequency and quantity of consumption among students who drank exclusively at home. Students who drank exclusively in peer settings drank less frequently than the majority of students who drank both at home and in peer settings but the amounts consumed per occasion were similar to those of the majority of students.

More recent data concerning adolescent drinking patterns in the United States have been obtained from a national survey of senior high school students conducted in 1978 (Rachal et al. 1980). These data provide the basis for the analyses concerning contexts of adolescent drinking that are presented in this paper. Students were asked to indicate the frequency of drinking in eight different contexts. The response categories included: never drink or don't drink in this setting; sometimes; frequently; most of the time. The response categories did not specify the exact frequency of drinking in these contexts, but rather

the context for a frequency of events. Thus a student who drinks most of the time at teenage parties may do so once a month, once a week, or more often. Throughout this paper, the term "context frequency" refers to the overall proportions of students who report drinking in a particular context. No information was obtained on the amount of alcohol consumed in each particular setting and estimates of the amount of drinking were based on a typical occasion.

This paper focuses on two contexts: at teenage parties with no adults present (i.e., "teen" parties) and at home on special occasions. In addition to being conceptually distinct, analysis indicates that these two contexts are statistically the most independent and representative of the eight items. In addition, a third context, at teenage parties when parents or other adults are present (i.e., "adult" parties), is included to contrast with teenage parties when adults are not present.

Of the total 4,918 students who participated in this survey, 3,830 were included in the present analyses. Excluded were 196 students (4 percent) who were inconsistent in response items, 768 students (15.6 percent) who reported abstinence from beverage alcohol, and 124 students (2.5 percent) who were classified as former drinkers.

Drinking Contexts and Patterns of Consumption

The relationship between drinking contexts and drinking patterns for the 1978 national survey of senior high school boys and girls is presented in table 1. Drinking patterns are defined as categorization of questionnaire assessment of typical drinking frequency and typical quantity of consumption, on the average. Details of the procedures employed in this classification scheme are found in Rachal et al. (1980). The categorization in table 1 distributes the students into three typical quantity groups (light $= <$ .68 oz of ethanol; medium $=$ .68-2.7 oz of ethanol; heavy $= >$ 2.7 oz of ethanol per typical drinking occasion) for each of three frequency groups (once a month at most; three to four times a month; at least once a week).

In order to simplify data presentation only two context response categories are examined: "never" and "most of the time." Since the present data omit abstainers and former drinkers, the inclusion of the "never" category is instructive and serves to define more precisely the relationship between drinking patterns and specific contexts. As indicated in table 1, for example, the proportion of male students who never drink at teenage parties when adults are not present is very low among the frequent-heavy drinking category (2 percent). This figure contrasts with the proportion of frequent-heavy drinking students who do not drink at "adult parties" (19 percent) or at home (17 percent). These patterns suggest that approximately one-fifth of the frequent-heavy drinking boys never drink in adult contexts but do drink elsewhere, whereas only 2 percent of the frequent-heavy drinking boys never drink at teen parties. A similar pattern is present among heavy drinkers in each of the other frequency categories. It may be inferred

that teenage parties when adults are not present represent the drinking context which draws upon heavy drinking boys. The exact relationship must be inferred since the quantity data are not context-specific assessments. The relationship becomes more clearly evident by examining the proportions of students in the various quantity-frequency groups who drink most of the time in the three specified contexts (table 1).

The proportion of heavy drinkers in each frequency group is highest among students who drink mostly at teenage parties when compared to other drinking contexts. The proportion of heavy drinkers increases as the frequency of drinking increases. Among boys who drink once a month at most, 45 percent are heavy drinkers compared to 75 percent of boys who drink at least once a week. Among girls who drink once a month at most, 49 percent are heavy drinkers compared to 78 percent of girls who drink at least once a week.

The presence of parents or other adults at parties is associated with an attenuation of the proportion of heavy drinkers in this context. The proportion of heavy drinkers among students who drink most of the time at adult parties is considerably lower for all frequency groups than in the context of teenage parties. Among boys who drink most of the time at home on special occasions, the relationship reverses that of the other contexts. The proportion of light drinkers is higher than the proportion of heavy drinkers for each frequency category. Among senior high school girls, the proportion of light drinkers is similar to the proportion of heavy drinkers for each frequency category. Moreover, the proportion of heavy drinkers tends to be higher for girls who drink most of the time at home than for girls who drink most of the time at adult parties. In general, however, the relationships between drinking contexts and drinking patterns for girls are similar to those described for boys.

Statistical assessments of the relationships between drinking context frequency and patterns were made separately for average drinking frequency and average quantity of alcohol consumption. The findings yielded significant relationships ($p < .001$) between overall frequency of drinking for each context for boys and girls. The relationships between overall average quantity were significant ($p < .001$) for teenage parties both when adults were present and when they were not present. The relationship between average quantity and drinking at home on special occasions was not significant for boys and girls.

The present findings suggest that a strong relationship exists between adolescent drinking contexts and overall patterns of consumption. Teenage parties when adults are not present are related to patterns of frequent and heavy consumption among boys and girls. The present data, however, do not isolate direction or causality in the relationships. While it can be argued that the absence of adult supervision at teenage parties is contributing to excessive consumption, it is equally tenable that these occasions tend to draw upon a heavier drinking group of adolescents.

Table 1. Distribution of Drinking Context Frequency for Senior High School Students by Drinking Pattern and Sex (in Percentages)

Frequency	Once a Month at Most			3 or 4 Times a Month			At Least Once a Week		
Quantity	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Boys									
Teen parties									
Never	44	18	6	34	8	3	46	8	2
Most of the time	4	21	45	8	45	66	17	55	75
Adult parties									
Never	62	45	50	58	37	38	39	27	19
Most of the time	2	4	8	3	8	14	8	15	25
At home									
Never	22	29	36	15	24	23	4	16	17
Most of the time	18	15	13	21	19	18	42	35	27
(*N*)	(121)	(277)	(145)	(38)	(176)	(189)	(24)	(238)	(464)
Girls									
Teen parties									
Never	40	13	7	21	5	2	23	3	0
Most of the time	7	28	49	28	46	68	30	60	78
Adult parties									
Never	61	39	39	33	26	26	36	15	15
Most of the time	2	7	12	4	15	15	17	26	25
At home									
Never	13	17	16	15	17	21	5	16	9
Most of the time	26	22	24	32	30	29	36	36	38
(*N*)	(227)	(465)	(74)	(53)	(346)	(142)	(44)	(290)	(221)

Drinking Contexts and Drunkenness

Having shown a relationship between the overall drinking patterns and the frequency of drinking in specific contexts, it is of interest to determine if a relationship exists between different drinking contexts and the risk of negative consequences. Students in the survey were

asked to estimate the number of times during the past year that they drank enough to feel a little high or lightheaded. Similarly, they were asked to estimate the number of times in the past year that they drank enough to have gotten drunk or very, very high. Times drunk may be viewed as an extension of the drinking quantity variable, but it also serves to define a more susceptible state of risk regarding behavioral consequences of drinking.

The relationship between drinking contexts and the number of times drunk in the past year is presented in table 2. There is a strong relationship between times drunk and the percentage of students who drink mostly at teenage parties when adults are not present. The majority of students who frequently get drunk drink mostly at teen parties with no adults present, rather than mostly in other settings. For example, among boys who reported getting drunk 52 or more times, 76 percent drank mostly at parties with no adults, 28 percent at parties with adults, and 29 percent mostly at home. Among students who report never having gotten drunk, 39 percent never drink at teen parties. For students who reported getting drunk only once in the past year, only 16 percent report never drinking in this context.

As was the case for drinking patterns, the report of drunkenness by students who drink mostly in a given context does not indicate that drunkenness occurred in that context. For example, the fact that 29 percent of students who report getting drunk 52 or more times a year report drinking most of the time at home does not necessarily mean that they actually get drunk in the home context.

To further illustrate this issue and to elucidate the relationship between drinking context and drunkenness, four mutually exclusive categories were derived from these context items.

I. At home on special occasions but not at teenage parties or parties when adults are present (11 percent of the boys and 14 percent of the girls)

II. At teenage parties when adults are present but not at home on special occasions (8 percent of the boys and 5 percent of the girls)

III. At teenage parties when adults are not present but not at home on special occasions (9 percent of the boys and 7 percent of the girls)

IV. At teenage parties when adults are not present and at home on special occasions (56 percent of the boys and 58 percent of the girls)

Type I students drink only in the home context, while Type IV students drink in both peer and parental contexts. Types II and III drink only in party contexts but differ in terms of whether they drink when adults are present (Type II) or when they are absent (Type III). Type II students drink at teen parties and also at parties where adults are present. Type III students drink only at teen parties when no adults are present. The distribution of times drunk by these four contexts is presented in table 3 for boys and girls.

Table 2. Distribution of Drinking Context Frequency for Senior High School Students by Number of Times Drunk in Past Year and Sex (in Percentages)

	Number of Times Drunk in Past Year							
	None	Once	2–3 Times	4–5 Times	6–10 Times	12 Times	24 Times	52 or More
Boys								
Teen parties								
Never	39	16	6	5	2	3	4	2
Most of the time	11	24	44	49	63	65	77	76
Adult parties								
Never	60	46	37	35	31	27	24	23
Most of the time	2	4	8	11	14	13	20	28
At home								
Never	24	30	25	21	23	22	25	17
Most of the time	18	18	20	19	22	23	18	29
(*N*)	(417)	(190)	(233)	(145)	(148)	(128)	(142)	(338)
Girls								
Teen parties								
Never	36	12	7	3	1	2	2	1
Most of the time	14	28	36	55	67	74	62	79
Adult parties								
Never	50	44	29	24	25	16	24	18
Most of the time	4	10	12	11	19	18	18	31
At home								
Never	16	18	20	15	14	16	15	12
Most of the time	24	26	26	29	32	27	30	39
(*N*)	(579)	(291)	(305)	(170)	(114)	(116)	(129)	(250)

Table 3. Distribution of the Number of Times Drunk in the Past Year by Context Typology and Sex (in Percentages)

	Times Drunk								
	None	Once	2-3	4-5	6-10	12	24	52	(*N*)
Boys									
Type I	72	14	5	2	1	2	2	2	(170)
Type II	13	13	13	8	8	11	13	20	(149)
Type III	22	17	18	8	11	5	6	13	(189)
Type IV	17	9	14	9	10	8	9	24	(1,166)
Girls									
Type I	76	12	8	2	0	1	0	1	(241)
Type II	24	10	25	8	8	10	5	9	(129)
Type III	25	21	17	9	4	4	8	12	(155)
Type IV	22	15	16	10	7	7	8	16	(1,392)

Among boys and girls who drink exclusively at home (Type I) the majority report never having been drunk (72 percent of the boys and 76 percent of the girls). Boys and girls who drink both at teenage parties and at home (Type IV) have the highest proportion of times drunk. Students who drank at teenage parties with or without adults present (Types II and III, respectively) have distributions that are more similar to Type IV than to Type I. These groups (Types II and III) provide some interesting variations according to sex. Among boys, there were slightly higher proportions of times drunk for those who drink at parties when adults are present than for those who drink when adults are absent. Among girls, the proportion of times drunk was slightly higher among girls who do not drink when adults are present. This finding may reflect greater adult acceptance for drinking and drunkenness among boys than among girls.

Environmental Factors and Drinking Contexts

It has been shown in the previous section that the frequency of drinking in some contexts is more closely aligned with heavier drinking patterns among adolescents than for other contexts. It is therefore important to attempt to understand the factors which relate to the frequency of drinking in specific contexts. Although the source of these antecedents may be found in both environmental and individual characteristics, the focus of this paper is on the environmental sources of influence. The next section of the paper therefore examines several

environmental variables (region, community size, access to alcohol, peer drinking models, and parental drinking patterns) and their relationship to the frequency of adolescent drinking contexts. A final section of the paper will assess the overall contribution of these variables to adolescent drinking behavior.

Regional Variations and Drinking Contexts

National surveys of adult drinking patterns typically reveal differences in drinking patterns by geographic region. There are proportionately more drinkers in the East, the North, and the West, and fewer in the South. Rural areas tend to have larger percentages of abstainers than do the more urbanized areas. These differences have been shown to relate to variations in religious affiliation, ethnicity, and other demographic characteristics of population subgroups (Cahalan and Room 1974).

The analysis of regional differences in the national survey of junior and senior high school students (Rachal et al. 1975) indicated little variation in drinking patterns. The only exception reported was in the South which had the highest proportion of abstainers and the lowest proportion of heavy drinkers. There was also some indication that the proportion of abstainers was slightly higher in nonmetropolitan areas.

Table 4 presents the distribution of context frequencies of senior high school boys and girls for the census regions of the United States. The findings indicate that among boys and girls the proportion of students who drank mostly at teenage parties when adults are not present is higher in the Northeast and North Central regions and lower in the South and West. The regional pattern for parties when adults are present is less pronounced but among girls it is highest in the urban South (20 percent). The frequency of drinking at home on special occasions is highest in the Northeast for both boys and girls and is lower in the Southern and Western rural areas.

The influence of geographic region and size of community upon context frequency was assessed statistically. Size of community was based on 1970 county populations and dichotomized to approximate urban versus rural communities.

Among boys, both region and community size were significantly related to the frequency of drinking in all three contexts. The overall pattern was for more frequent drinking in the Northeast and North Central regions and in more urban communities. Region interacted significantly with size of community in the frequency of drinking at home on special occasion. Drinking at home was more frequent in rural areas of the Northeast (28 percent) and less frequent in rural areas in the South (9 percent).

Table 4. Distribution of Drinking Context Frequency for Senior High School Students by Region, Community Size, and Sex (in Percentages)

	Northeast		North Central		South		West	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Boys								
Teen parties								
Never	11	10	9	9	14	7	12	9
Most of the time	55	48	53	50	43	34	47	30
Adult parties								
Never	33	35	34	30	37	58	37	30
Most of the time	14	12	13	14	14	10	12	0
At home								
Never	16	19	19	33	26	53	20	35
Most of the time	24	28	21	16	23	9	21	22
(*N*)	(437)	(92)	(320)	(129)	(277)	(123)	(274)	(23)
Girls								
Teen parties								
Never	13	13	9	12	10	8	10	0
Most of the time	44	50	50	43	38	37	44	50
Adult parties								
Never	31	33	35	47	24	62	26	36
Most of the time	13	15	12	4	20	2	14	14
At home								
Never	12	10	14	28	14	46	16	29
Most of the time	33	25	31	13	33	8	25	7
(*N*)	(440)	(88)	(365)	(94)	(458)	(90)	(308)	(14)

Among girls, region interacted significantly with size of community in all three contexts. The frequency of party context, without adults present, was higher in the more rural areas of the Northeast (50 percent) and in more urban areas of the North Central region (50 percent). Parties with adults present were lowest in rural areas of the North Central and Southern regions. The frequency of drinking at home was lower in the more rural communities of all regions except the Northeast.

These two variables, while significant, account for only small proportions of the variance in context frequency. The absence of a strong relationship is due, in part, to the various other factors that are associated with geographic region. As pointed out in the introduction, these variables are conceptually more remote from drinking behavior and whatever influence they exert is probably associated with other environmental factors.

Alcohol Availability and Drinking Contexts

Geographic regions often differ on the degree to which teenagers have access to alcohol. Restrictions, both social and legal, on the availability of alcohol have been found to influence not only the prevalence of adolescent drinking but also the contexts for drinking. The drinking practices of high school students in a rural southern abstinence community were found to be markedly different from the patterns reported in studies of teenage drinking in other less restricted locations (Globetti 1969, 1973). One study (Globetti 1973) reported that 25 percent of the students used alcohol and another (Globetti 1972) that 32 percent used alcohol, both percentages being considerably lower than the 60 to 90 percent cited in other investigations. The events and circumstances surrounding the act of drinking also were found to be somewhat different. Rather than being introduced to alcohol in the home with parents or relatives present, drinkers in abstinence communities were usually introduced to alcohol outside the home and very few drank with parents or adults. Most respondents drank with peers in secretive situations, without parental knowledge or approval. There is some evidence to suggest that these students may experience more problems with alcohol than those who drink with parents or relatives (Globetti 1969, 1972). It has been found also that in a permissive community alcohol is usually obtained illegally (under age) from a legal merchant, whereas in a restrictive community it is usually obtained illegally from an illegal merchant (Globetti et al. 1967; Windham et al. 1967).

It has been suggested that legal restrictions may have more impact on the places where drinking occurs and the source from which alcohol is obtained than on actual amounts consumed (Stacey and Davies 1970). Davies and Stacey (1972) explain their finding that younger teenagers (age 14) drink more often in parks and streets than do older teenagers on the basis that younger teenagers cannot purchase drinks in a public establishment. In a study of the drinking behavior of boys aged 14 to 18 in Helsinki, Copenhagen, Oslo, and Stockholm, it was concluded that the main effect of more rigid control was an increase in the amount of liquor bought illegally by underage drinkers (Bruun and Hauge 1963).

The consumption of beverage alcohol by adolescents below the legal purchase age implies some network of access to alcohol for the students. Information on the sources of access is available from the 1978 survey. Most of the students obtained alcohol from friends who would purchase it. However, one-fifth purchased it themselves. The proportion of the 1978 senior high school students who indicated that they could obtain alcohol by source is as follows: at home (5 percent), from a friend (8 percent), from a friend who would buy it (30 percent), through the students' own purchase (20 percent), and at parties and weddings (5 percent).

Information on the access to alcohol by the 1978 senior high school students was obtained from the question, "Can you obtain alcoholic beverages when you want them?" The relationship between the frequency of drinking contexts and access to alcohol is presented in table 5. It is clear that there is an overall relationship between the frequency of drinking in any context and access to alcohol. The proportion of students who drink most of the time in each of the three contexts is highest for those students who always have access to alcohol. The proportion of both boys and girls who can always obtain alcohol, however, is highest among those students who drink most of the time at teenage parties when adults are not present (approximately 60 percent). By way of contrast, for students who drink most of the time at home on special occasions, there is less variation in the proportion of type of access to alcohol. Presumably, in these contexts parents exert more control over the access network than is the case for context when adults are not present. This assumption would seem to diminish variation by access category for home contexts and increase variation of access category for contexts in which the student is forced to rely upon other means of procurement.

Peer Influences and Drinking Contexts

The presence of peers who both approve of teenage drinking and are themselves drinkers has long been recognized as an important environmental structure relating to both onset of drinking and the maintenance of drinking. Several different aspects of peer influences on adolescent drinking have been investigated recently, including peer

pressure, peer behavior, and peer relationships in general. With the exception of one study (Forslund and Gustafson 1970), there is very little evidence for the effect of direct peer pressure on adolescent drinking practices (Maddox and McCall 1964; Mandell et al. 1963; Rachal et al. 1975). Instead, peer influence seems to take the more subtle form of peer modeling and networking.

A number of studies have analyzed the relationship between use of alcohol by adolescents and the use of alcohol by their peers. These studies consistently find that adolescent drinking becomes more prevalent, frequent, heavier, or more problem-related as the extent of drinking among friends increases. Wechsler and Thum (1973) report that teenagers who drink heavily are likely to have friends who drink and to perceive drinking among their peers as being widespread. Among 2,000 junior and senior high school students most of the heavier drinkers also had friends who used liquor, compared with significantly lower percentages for abstainers and light drinkers. Similarly, Kane and Patterson (1972) found that 50 percent of the heavy drinkers (those who drank several times a week) reported that almost all of their friends drank, compared with only 3 percent of the nondrinkers. Rachal et al. (1975) found that heavier drinkers had more friends who drank "at least sometimes" than infrequent drinkers did. Another study found that the percentage of teenage drinkers increased as the number of friends who drank increased, even when parents disapproved of teenage drinking (Alexander and Campbell 1967).

Jessor and his colleagues obtained data pertaining to social support for drinking in a longitudinal study of junior and senior high school students. Perceived support for drinking from peers was the most important variable accounting for a subject's change in drinking status from abstainer to drinker during a 1-year period (Jessor et al. 1972). Jessor and Jessor (1977) also indicate that adolescent drinking becomes more frequent and heavier as the extent of perceived drinking among peers increases.

There is also evidence that mere involvement with peers is a significant variable in the drinking behavior of adolescents. As time spent with friends increased, drinking also increased (Polk and Burkett 1972). Similarly, it has been found that as participation in peer activities in general increases, teenage drinking may increase (Margulies et al. 1977). In fact, in a study comparing the relative influence of peers and parents with respect to initiation into the use of hard liquor, degree of adolescent involvement in peer activities, e.g., attending parties, getting together with friends, dating, was the single most important predictive variable (Kandel et al. 1978).

Findings from the 1978 national survey of senior high school students indicate that approximately 68 percent of the students report that most or all of the kids in their school class drink alcohol. Information on the extent of peer models for each student was obtained from the question, "How many of the kids you hang around with drink?"

Table 5. Distribution of Drinking Context Frequency for Senior High School Students by Alcohol Availability and Sex (in Percentages)

	Can you obtain alcoholic beverages when you want them?			
	No	Sometimes	Usually	Always
Boys				
Teen parties				
Never	35	18	9	6
Most of the time	22	24	48	63
Adult parties				
Never	61	48	38	26
Most of the time	8	7	8	21
At home				
Never	34	23	24	22
Most of the time	13	17	18	27
(*N*)	(64)	(273)	(680)	(680)
Girls				
Teen parties				
Never	38	14	7	7
Most of the time	14	29	47	60
Adult parties				
Never	51	38	30	24
Most of the time	5	7	12	26
At home				
Never	15	15	18	14
Most of the time	23	22	29	36
(*N*)	(115)	(437)	(803)	(480)

The distribution of the response categories to this question by type of drinking context is presented in table 6.

There is a general relationship between the frequency of drinking contexts and proportion of peers who drink. The proportion of students who drink most of the time in each of the three contexts is highest for those students who report that most of the kids they hang around with drink. The relationship is strongest for students who report drinking most of the time at teenage parties when adults are not present. Seventy-one percent of the boys and 67 percent of the girls who indicate "all of the kids they hang around with are drinkers" drink at teenage parties most of the time. The percentages of this category are much lower for the other contexts.

While it has been found repeatedly that adolescents demonstrate drinking behaviors similar to those of their friends, the dynamics of this relationship are not yet clear. An individual adolescent, who for his or her own personal reasons has decided to drink, may seek social support for that drinking behavior by befriending other adolescents who drink. It is also quite possible that the mere existence of peer groups serves as an incentive to drinking, as an expression either of cohesiveness or of rebellion against parents. This is clearly an area warranting further investigation.

Parental Influences and Drinking Contexts

While studies generally indicate that peer influences have more of an impact on adolescent drinking than parental influences do, parents nevertheless play a very significant role. Studies have considered the influence of the general parent-child relationship, parental attitudes toward drinking, and actual parental drinking practices.

Wechsler and Thum (1973) found that heavier teenage drinkers were less likely than moderate drinkers to report being "very close" to their families. Prendergast and Schaefer (1974) reported that perceived parental attitudes and behaviors toward the child, particularly maternal control, correlated more strongly with adolescent drinking behavior than either parent's drinking behavior or attitudes toward drinking. However, Smart et al. (1978) found that parental rejection and control had very little association with adolescent drinking behavior. Margulies et al. (1977) found that neither the closeness of relationship to their families nor the perception of parental control significantly influenced the onset of drinking. However, the relative closeness of parents and peers did predict onset of drinking, with adolescents closer to peers more likely to start drinking.

Table 6. Distribution of Drinking Context Frequency for Senior High School Students by Sex and Number of Peers Who Drink

	None	1–2	Several	Most of them	All of them
Boys					
Teen parties					
Never	38	41	20	84	
Most of the time	14	8	27	48	71
Adult parties					
Never	48	58	47	36	28
Most of the time	5	2	5	11	21
At home					
Never	19	20	22	24	23
Most of the time	16	18	19	20	24
(*N*)	(42)	(158)	(316)	(678)	(493)
Girls					
Teen parties					
Never	56	48	18	7	5
Most of the time	10	8	18	44	67
Adult parties					
Never	55	58	42	20	25
Most of the time	8	5	5	13	22
At home					
Never	12	16	17	16	
Most of the time	20	24	25	27	33
(*N*)	(53)	(217)	(364)	(727)	(591)

The relationship between parental attitudes specifically toward drinking and adolescent drinking practices is not a simple one. There is some evidence that while more restrictive and disapproving attitudes by parents may result in a decrease in overall drinking, they may be related also to an increase in the amount of problem drinking. Globetti (1967) reported higher incidences of problem drinking among children of disapproving parents than among children of approving parents in a Mississippi community. While only 51 percent of children of approving parents could be classified as mild problem or problem drinkers, 79 percent of children of disapproving parents could be so classified. The foreign study by Davies and Stacey (1972) indicates that the relationship between parental attitudes toward alcohol use and adolescent drinking may be a more complicated one. Abstainers, occasional drinkers, and heavy drinkers perceived their parents' attitudes toward drinking as being negative, whereas light and moderate drinkers perceived their parents' attitudes as being positive. The parents of abstainers were perceived as having the most negative attitudes, followed by the parents of heavy drinkers.

Most of the literature on parental influences on adolescent drinking focuses on the relationship between actual parental drinking practices and adolescent drinking behavior. A number of major surveys of adolescent drinking in the 1950s and 1960s reported a relationship between parental and adolescent drinking practices. (See Blane and Hewitt 1977 for a comprehensive review of the earlier literature.) More recent studies continue to indicate a correspondence between parental and adolescent behaviors, either in terms of prevalence and frequency of alcohol use or in terms of prevalence and frequency of problem drinking.

Margulies et al. (1977) reported that while self-reported parental attitudes regarding the harmfulness of distilled spirits affected the onset of teenage drinking to a certain degree, the actual example set by parents had an even greater impact on adolescent drinking. Furthermore, it was specifically the use of distilled spirits which had an effect on adolescent drinking. Forslund and Gustafson (1970) also found that parental drinking was significantly related to student drinking, although peer pressure to drink was found to be an even stronger influence. Both studies found that adolescent girls were more susceptible to the examples of significant others (parents or peers) than boys were. For example, in the latter study maternal drinking influenced both adolescent boys and girls, while paternal drinking had a significant impact only on daughters.

The national survey conducted in 1974 (Rachal et al. 1975) reports that students whose parents drank were almost twice as likely to be heavier drinkers than students with abstinent parents (27 percent vs. 14

percent). Abstaining students were most likely to have abstaining parents and the least likely to have parents who drank. Thirty-five percent of the abstainers and 11 percent of the heavy drinkers reported that their parents were abstainers. Eighteen percent of abstainers and 42 percent of heavy drinkers reported regular drinking by their parents. Kandel et al. (1978) report even more dramatic differences. Seventy-two percent of the families in which parents were abstainers had children who also abstained and 81 percent of the families in which both parents drank had children who also drank.

In the 1978 national survey, the students were asked to indicate the drinking patterns of their parents. The response categories included: (1) don't drink, (2) sometimes, and (3) fairly regularly. The distribution of context drinking frequency by parental drinking pattern is presented in table 7.

There is an overall relationship between parental drinking patterns and drinking frequency in all three contexts. For both boys and girls, however, the strength of the association is strongest at home on special occasions. The proportion of students who drink most of the time in this context is much higher for drinking parents (24 percent of boys and 29 percent of girls) than for nondrinking parents (6 percent of boys and 6 percent of girls). Similar trends are present in the other contexts but they are not as pronounced.

Environmental Factors and Adolescent Drinking

The major objectives of this paper have been to examine the association between the frequency of drinking in defined contexts and adolescent drinking patterns and, second, to examine the relationship between selected environmental factors and the frequency of drinking in these contexts. This final section assesses the contribution of all of these factors to adolescent drinking.

In order to obtain a statistical assessment of the magnitude of environmental effects, the five factors (region, community size, access to alcohol, parental drinking, and peer models), together with the three context items, were included in a multiple regression model predicting

Table 7. Distribution of Contextual Drinking Frequency by Parental Drinking Pattern and Sex (in Percentage)

	Sometimes	Don't Drink	Fairly Regularly
Boys			
Teen parties			
Never	14	16	12
Most of the time	44	43	51
Adult parties			
Never	37	57	33
Most of the time	12	9	13
At home			
Never	19	57	17
Most of the time	21	9	26
(*N*)	(901)	(188)	(637)
Girls			
Teen parties			
Never	15	17	12
Most of the time	39	37	46
Adult parties			
Never	32	53	33
Most of the time	13	8	14
At home			
Never	14	47	13
Most of the time	26	10	34
(*N*)	(983)	(164)	(800)

the number of times adolescents reported being drunk in the past year. These factors were entered in a step-wise regression model in the following order: region (Northeast and North Central versus South and West), community size, region by community interaction, parental drinking, access to alcohol, peer drinking, teen parties, adult parties, and drinking at home on special occasions.

The ordering was based on the assumptions that regional characteristics and parental drinking were antecedent to the other variables and that peer drinking and contexts were more proximal to drinking behavior. As noted earlier, the correlational nature of these data preclude causal interpretations of this ordering of variables. The dynamics of the relationships between access to alcohol, peer drinking, and drinking contexts are not yet clear. Similarly, reports of times drunk in the past year may not simply reflect the absence of parental controls at teen parties. These occasions may draw upon a heavier drinking group of adolescents. Nevertheless, this ordering of variables in the regression allows an assessment of the relationship of drinking context to reported times drunk when other variables, known to relate to adolescent drinking, are entered first in the regression equation as covariates. The results of the regression analyses for boys and girls with respect to the amount of variance explained (R2) are presented in table 8.

Table 8. Regression Estimates of the Effects of Environment and Contextual Factors on Drunkenness for Boys and Girls

	Percentage of Variance Explained (R^2)	
Factors	Boys	Girls
Region	.001[1]	.011
Community size	.011	.011
Region by community size	.013	.012
Parental drinking	.018	.015
Access to alcohol	.181[1]	.131[1]
Peer drinking	.269[1]	.210[1]
Teen parties	.372[1]	.312[1]
Adult parties	.386[1]	.322[1]
At home	.386	.322

[1] $p < .01$.

Regional variation was significant for boys but not for girls. Among boys, reported times drunk was higher in the Northeast and North Central regions and lower in the South and West. Region, however,

accounted for only a small proportion of the variance in the regression model. When the effects of region were controlled (entered first in the regression), the effects of community size and the interaction of community size by region were not significant. Overall, the relationship between regional variables and reports of times drunk was very low.

Parental drinking was not significantly related to reported times drunk for boys or girls.

Perceived access to alcohol, however, was significant in both of the regression equations. It accounted for 18 percent of the variance for boys and 13 percent of the variance for girls. The perceived access to alcohol was positively related to the number of times adolescents reported being drunk in the past year.

Reports of the number of peers who drink was also significantly related to reported times drunk. When entered in the regression equation with the other variables, the amount of variance accounted for was 27 percent for boys and 21 percent for girls.

The frequency of drinking at teenage parties when parents or other adults were not present related significantly to reported times drunk in the past year. The frequency of drinking in this context was directly related to reported times drunk and substantially increased the overall level of variance accounted for by other environmental factors: 37 percent among boys and 31 percent among girls. Although the frequency of party attendance when adults were present was significant for both sexes, it accounted for only a small proportion of the variance when other variables were entered first in the equation. Drinking at home on special occasions was not significant in either regression.

Summary

It is clear from the findings reported in this paper that understanding the circumstances in which adolescents consume alcohol is important not only in terms of predicting heavier consumption levels but in directing attention to features of the environment which may increase understanding even further. As indicated earlier in the paper, the conceptual advantage of identifying relevant drinking contexts is

twofold. First, it directs attention to critical factors in the immediate environment which influence the level of consumption. Second, it directs attention to antecedent conditions which structure the environment of the adolescent in terms of movement toward and away from settings in which alcohol is present and, in the case when it is present, the nature of the setting (i.e., at home on special occasions, at teenage parties).

The data presented here as well as in other studies (Davies and Stacey 1972) indicate that social controls on teenage drinking levels are more likely to be exercised when parents and other adults are present. The structure of these controls and their efficacy needs to be studied. More important, in view of the frequency of drinking in nonadult contexts, and its connection to heavy and problem drinking, more detailed studies are needed to identify the critical variables in peer contexts which influence heavier consumption. Teenage parties vary considerably with respect to several dimensions: formal and informal occasions, the number of persons present, the specific location, the sex ratio and age ratio of those present, access to alcohol, and friendship patterns, to mention a few. Research is necessary to determine which of these factors play a critical role in the level of consumption.

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Chapter 7

Youth, Alcohol, and Traffic Accidents

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Abstract

Traffic accidents generally and alcohol-related accidents in particular constitute the most frequent cause of death and disability of American youth. While this has been true for several decades, it is only within the last 5 years that national attention to this age-specific public health problem has been raised to an appropriately high level.

Youth aged 16 to 24 are exposed to more alcohol-related driving than are older adults, yet their rates of crash involvement exceed even the high levels expected on the basis of exposure alone. This may be due to the central role of the automobile in youthful society. Youth who become involved in alcohol-related crashes are more likely than other youth to have more than average difficulties in school, work, social relationships, family relationships, and other social indicators which also isolate high risk groups among older drivers. Youthful target groups prefer beer to other alcoholic beverages. These indicators, however, are not sufficiently precise to identify, in advance, which young drivers will actually become crash involved because of drinking and driving.

Making beverage alcohol more available by lowering legal drinking ages is usually responsible for increasing alcohol-related traffic accidents among the affected youth at the State or local level. Lower legal drinking ages in Michigan, Massachusetts, Maine, Illinois, Ontario, and elsewhere have been found to cause higher frequencies of alcohol-related crashes among the 18-, 19-, or 20-year-old youth. The only State that has been scientifically studied in which lowering the legal drinking age did not cause an increase in alcohol-related crashes was Vermont. NIAAA is currently sponsoring research in Michigan, Maine, and Massachusetts to measure the effectiveness of raising the legal drinking ages as a means of reducing alcohol-related traffic crashes among youth.

Recommendations include development and evaluation of educational and policy programs for prevention of drinking and driving among youth, determination of precrash drinking practices of youth, and rigorous evaluation of the effect of policy changes, including higher legal drinking ages, on traffic accidents among youth.

Introduction

The relationship of alcohol and traffic accidents has been recognized for over half a century as a major source of injury and death in the United States (Holcomb 1938; Waller 1978). Public attention to this relationship, however, has been inconsistent, despite overwhelming evidence that has been accumulated since the earliest acknowledgment that drinking drivers are at an elevated risk in the larger problem of alcohol-related traffic morbidity and mortality since the 1940s. The progressively increasing availability of automobiles for the recreational use of young people, combined with the consumption of alcohol, have taken on a unique and irrefutable role in youthful society—a role which has become an equal for some, in many respects, to the roles of school, peer group, family, and neighborhood in the expression of youthful independence and social development (Bureau of Alcohol and Other Drug Abuse 1978). The developing importance of the car, recreational driving, and drinking in contemporary youthful society has been paralleled by increasing numbers of alcohol-related traffic crashes among young drivers (Bureau of Alcohol and Other Drug Abuse 1978; Lazar and Lazar 1976). These crashes have produced annually growing numbers of fatalities and also injuries, of which many have led to permanent disabilities (Bureau of Alcohol and Other Drug Abuse 1978; North Atlantic Treaty Organization 1974). Currently, traffic accidents are responsible for more fatalities among youth than any other cause of death (Filkins et al. 1970; National Institute on Alcohol Abuse and Alcoholism 1979; North Atlantic Treaty Organization 1974). As large as the annual number of deaths due to young drinking drivers is, an even larger number of permanent and disabling injuries results from young drinking drivers (Baker 1973). The magnitude of this major public health problem has not been the target of research, policy, or social concern of a scale that is comparable to its annual contribution to morbidity and mortality (Comptroller General of the United States 1977; Hanson and Simons 1970; National Institute on Alcohol Abuse and Alcoholism 1979; North Atlantic Treaty Organization 1974). The nature of the problem, current programs to reduce the problem, and the most significant issues regarding alcohol-related traffic accidents will be discussed below, concluding with suggested subjects for research and leadership by the Federal Government.

In 1978 drivers under 20 were involved in 11,500 crashes with at least one fatality. There were 5,600,000 reported traffic accidents caused by young drivers (15-20 years old) (National Safety Council 1980). Additionally, an unknown number of youth were seriously injured in these traffic accidents, also caused by drinking drivers. No other singular source of mortality approaches traffic accidents among youth in terms of sheer numbers, and no other cause of death is as predictably associated as traffic accidents with a single known contributing factor—namely, the interaction of beverage alcohol and a young driver's ability

to control an automobile (Comptroller General of the United States 1979).

Numerous public and private efforts have been initiated to reduce the number of alcohol-related traffic accidents. These efforts have included educational programs, court and police intervention, and public policy changes (Cramton 1968). The uniqueness of young drivers, relative to the larger adult population, has been infrequently recognized in the conceptualization of these programs, however (Comptroller General of the United States 1979; North Atlantic Treaty Organization 1974). Similarly, the characteristics of youthful drinking practices and the underlying reasons why youth drink and drive are rarely incorporated into programs intended to reduce alcohol-related crashes. Rather, programs based on adult models of behavior which have little probability of success with youth are more common (Comptroller General of the United States 1979; Cramton 1968; North Atlantic Treaty Organization 1974). One reason for the lack of youth-designed programs is a state of knowledge that is largely descriptive. The precursors to youthful drinking or driving are poorly understood in ways that permit meaningful interventions. Thus, society's ability to describe these catastrophic events after the fact is greatly more developed than is its ability to identify target groups with known, elevated likelihoods of alcohol-related crash involvement before crashes occur (Baker 1973). This insufficiency in the state of knowledge impairs society's ability to prevent alcohol-related crashes and thereby reduce associated morbidity and mortality.

The Epidemiology of Youth, Alcohol, and Traffic Accidents

The majority of current knowledge of the relationship of alcohol to traffic safety among youth is the result of applied research conducted since the *1968 Alcohol and Highway Safety Report* from the U.S. Secretary of Transportation to the U.S. Congress (Boyd 1968). This report summarized the existing state of knowledge and gave impetus to Federal initiatives during the 1970s. The state of the art in 1968, however, was entirely dependent on very few research studies and little scientifically designed evaluation of programs aimed at reducing the numbers of drinking drivers or subsequent deaths and injuries. Virtually no reports at that time focused exclusively on young drinking drivers as a distinct target population, which resulted in the adaptation for youth of research and action programs designed for adults. The most significant recognition from the last 10 years is that young, crash-involved, drinking drivers are distinct in many ways from older drivers, not only in the types and frequencies of their alcohol-related crash involvement, but also in the causes of their crashes.

Virtually every major study in the area identifies youth as being overrepresented in alcohol-related traffic crashes. This finding is entirely consistent despite many variations of measurements and research approaches. Studies of fatalities (Fell 1977; Filkins et al. 1970; Goldstein 1972; Laessig and Waterworth 1970; O'Day 1970; Riley 1968; Rosenberg et al. 1974) are consistent in the finding that between 45 and 60 percent of all fatal crashes with a young driver are alcohol related. The probability of alcohol involvement increases with the severity of the crash, ranging from property damage only to at least one consequent death. Reviews of this association are consistent also for all levels of crash severity; for all traffic crashes, young drivers are considerably more likely to have been drinking than older drivers. Also, young drivers have more traffic accidents, with and without alcohol involvement, than older drivers (Babow 1975; Jones and Joscelyn 1978; Lacey et al. 1979; Zylman 1973*a*). Part of the explanation for the exceptional numbers of young drinking drivers involved in traffic crashes is related to their exposure on the road. Yet, among the youngest drivers, between 16 and 20, those who drink are still more likely to be crash involved after controlling for exposure (Carlson 1972; Preusser et al. 1975). Young people between 16 and 24 are involved in more fatal, injury-producing, and property damage crashes, and more crashes in which alcohol was involved, in a higher proportion than even their high exposure would suggest, than older drivers. The epidemiologic research of the past decade has provided some understanding of the causes and circumstances of the problem.

Young people who have an elevated risk of crash involvement, on the average, have predictable drinking patterns. Smart et al. (1978) reported that "high school students who frequently get drunk are those who are heavy drinkers, drink away from home and in cars. . . ." Other studies confirm the direction of these conclusions. Waller and Warden (1973) reported that over half of males in their study in their teenage years or in their twenties were at increased risk regarding their likelihood of an alcohol-related crash involvement based on their drinking habits while only 24 percent of men over 30 were so classified. These authors also reported that very heavy drinking (five or more drinks in 2 hours or less) among high-risk drivers was more than twice as probable with younger male drivers than with men over 30, a difference in drinking pattern that was echoed by Harford and Mills (1978). A survey of New England college students reported that 10 percent of the 7,000 respondents reported having had a serious drinking-related problem, including an automobile accident (Wechsler and McFadden 1979).

The automobile and alcohol consumption are closely associated in the society of the young. A national study of adolescent drinking behavior notes that 40 percent of all respondents reported occasional drinking while driving or sitting in a parked car at night (Rachal et al., 1975). Wolfe and Chapman (1972) reported that 36 percent of high school males and 9 percent of high school females in Washtenaw County, Michigan, had driven after drinking two or more drinks in the

three months prior to the survey. A 1975 national survey of high school youth found that 32 percent acknowledged "riding in cars with 'heavily intoxicated drivers' at least once a month." These same students had little understanding of the hazards of driving while intoxicated (Grey Advertising, Inc. 1975).

A study of Florida college students in 1976 found that a "significant percentage" of the students reported that they had driven a car either after or while drinking within the previous 2 months (Pankan et al. 1976). Finally, to illustrate the point, another study of youth in southeastern Michigan found that by the age of 20, more than half the sampled men drank at least once weekly and drove at least once monthly after drinking (Pelz et al. 1975).

It has been widely recognized that young drivers become involved in traffic accidents after drinking smaller amounts of alcohol than do older drivers. Even in the 1968 Secretary of Transportation's Report to Congress, it was noted that ". . . although an appreciable percentage of teenagers who crash fatally after drinking are very intoxicated, fatally injured young drivers who have been drinking tend, as a group, to have lower blood alcohol concentrations than older drivers who crash similarly" (Boyd 1968). Frequently tested in subsequent research, this conclusion has withstood repeated analyses.

Waller (1972) indicated that teenagers were more likely than older drivers to have caused a crash and to have done so at lower blood alcohol concentrations than adults. Zylman (1972, 1973*b*) reported that drivers under 18 have "greatly increased vulnerability" to crash involvement after only one or two drinks. In a study of nighttime drivers and their alcohol usage, Carlson (1972) reported that most of the drivers studied aged 16 to 20 who had been drinking had lower blood alcohol concentrations than older drivers. In Carlson's study, driving at night was independently associated with increased crash involvement. Further, he stated that "the combination of inexperience in drinking and in driving is highly related to crash occurrence." This conclusion was interpreted to include both fatal and nonfatal crashes. Comparable conclusions have been reported by Baker (1973), Byrd (1975), McIntire (1976), Shults and Layne (1979), and Smart (1976) for crash involvement and also for drinking and driving arrests.

Another characteristic of alcohol-related traffic accidents, as well as all accidents, is that males are considerably more often involved than females as drivers. Virtually all studies confirm that the problem is male dominated by a wide margin. Typically, these same studies indicate that alcohol-involved crashes tend to involve a single vehicle and occur at night (Boyd 1968; Carlson 1973; Fell 1977; Filkins et al. 1970, 1974; Goldstein 1972; Jones and Joscelyn 1978; Lacey et al. 1979; Laessig and Waterworth 1970; Perchonok 1978; Plueckhahn 1978; Preusser et al. 1975; Riley 1968; Rosenberg et al. 1974). Douglass et al. (1974*a*) found, however, that between 10:00 p.m. and midnight, female, 18- to 20-year-old, crash-involved drivers were as likely to have been drinking as males. After midnight, however, young males are much more likely to

have been drinking. In part, this may be because fewer females than males are driving after midnight and if females are on the road, they are more likely to be passengers than drivers. Associated with this, Waller (1972) found that only 25 percent of the passengers of a drinking driver in a fatal crash were "better risks" with respect to drinking than the driver (himself). Many of these studies have indicated also that weekends produce more alcohol-related crashes with young drivers than weekdays, and holidays produce up to twice the number produced during average weekends. The extent to which weekend-weekday, holiday-nonholiday comparisons are explained only as a consequence of increased recreational driving and drinking has not been completely assessed (Jones and Joscelyn 1978; Laessig and Waterworth 1970; Waller 1970; White 1978). Waller (1970) contended that exposure is an inadequate explanation for the overinvolvement of youth in traffic accidents and suggested that the kind of exposure was likely to be as important as the quantity of exposure, a suggestion that has not been thoroughly researched.

A characteristic closely associated with all of the correlates of alcohol and traffic accidents noted thus far is driving at excessive speed, or at speeds too great for the road conditions (Fell 1977; O'Day 1970; Storie 1977). This association has been specified repeatedly for youth in studies of arrested drinking drivers and crash-involved drivers. In addition, increased speed in conjunction with drinking is more likely to be associated with younger drivers and with increased crash severity (Fingerman et al. 1977; Jones and Joscelyn 1978; Perchonok 1978; Waller and Goo 1969).

A few studies have determined that beer is more likely than wine or liquor to be the alcoholic beverage of choice by youth, and, more specifically, by youth involved in traffic crashes. Rooney and Schwartz (1977*a*,*b*) found that over 65 percent of a survey of high school seniors, in five States, reported that their five best friends use beer, and of the respondents themselves, 46 percent consumed beer weekly. Only 8 percent drank wine weekly and 12 percent consumed liquor. Among drinking drivers, Damkot et al. (1977) found that younger males considered beer less likely to cause an alcohol-related crash or to be intoxicating than liquor. Douglass and Freedman (1977) found that draft beer consumption was indicated, rather than liquor or wine, to be responsible for an increase in alcohol-involved crashes in Michigan when the age of purchase was lowered in 1972 from 21 to 18. These findings are consistent with the view that beer is the alcoholic beverage of choice by young people. Young drinking drivers do not differ from their nondriving peers in this regard.

Many investigations have sought to explain the role of social status, personality, and related factors involved with alcohol-related crashes among youth. Sobel and Underhill (1976) and Moses and Burger (1975) lend support to the hypothesis that youth, particularly teenage males, reacting to unstable marriages of their parents or to poor relationships with either parent, are associated with increased risk of abusive drinking

and driving after drinking. Divorced men are frequently found to be overinvolved in traffic crashes, particularly fatal crashes with younger (19-24) men (Filkins et al. 1970, 1974; Jones and Joscelyn 1978).

A few studies have specifically investigated the social and psychological characteristics of young drivers and associated these factors with drinking and crash involvement. Pelz and Schuman (1973) and Schuman et al. (1967) have reported that alcohol use in traffic accidents and arrests for driving while intoxicated interact with a sense of alienation and feelings of hostility. Schultz (1971) was among the earliest to report that the frequency of young drivers' involvements in alcohol-related crashes was not independent of peer pressures to drink and drive. Kraus et al. (1970) similarly were among the first to suggest that academic performance, early full-time employment outside of school (at or before age 17), and juvenile offense convictions are associated with increased risks of alcohol-related crash involvement. The exact roles of such factors, however, remain to be determined in that more recent studies have found that adolescents who are likely to drink frequently and to subsequently drive are not necessarily deviant regarding academic performance, school sports involvement, social behavior, liberalism, or impulsivity (Grey Advertising, Inc. 1975). Young drivers involved in alcohol-related crashes beyond high school age, however, are more likely on the average to have had prior traffic violation convictions, previous traffic accidents, and marital problems; to be unemployed; and to have discontinued formal education beyond high school (Filkins et al. 1974; Lacey et al. 1979). Young drivers killed in alcohol-related crashes are more likely than others to have experienced a series of social and personal problems and to have lower educational and socioeconomic levels than their cohorts (Asher and Dodson 1970).

To summarize the current state of knowledge of alcohol-related traffic accidents among youth, it appears that for certain youth and at certain times in a young person's life and during subsequent critical life events, the likelihood of an alcohol-related accident is greater than would be expected. Thus, the problem of alcohol-related traffic accidents among youth is not entirely a random process, but increasingly appears to be predictable.

Attempts to Reduce Alcohol-Related Traffic Casualties Among Youth

Although efforts to reduce the incidence of alcohol-related traffic casualties have been numerous, the majority of these programs have been designed for adults, persons over 21 years of age. These programs have predominantly included mass media public information projects, special police patrols and law enforcement activities, and court-related identification of problem drinkers and referral to special alcohol schools and treatment or rehabilitation. Youth-directed efforts

have been largely vested in the public schools as part of ongoing driver education or health education classes. Less frequent efforts include public information, law enforcement, and legal measures including the restriction of alcohol availability through minimum legal drinking ages and other related laws.

The largest organized effort during the last decade has been the U.S. Department of Transportation's Alcohol Safety Action Projects, some of which had well-developed, youth-oriented activities. While the principal target populations of these projects included drivers over 21, some of the projects included activities aimed at younger drivers. The most frequent type of activity was youth education, and the most frequent outcome was increased understanding of the risks of drinking and driving for young drivers rather than a reduction in alcohol-related casualties (U.S. Department of Transportation 1972). The Alcohol Safety Action Projects were aimed principally at drivers over 21 because this thrust was indicated by the 1968 report on alcohol and highway safety (Boyd 1968). Criteria were used throughout the projects utilizing numerous screening tests for diagnosis and entrance to court-referred treatment or rehabilitation programs. These tests were basically appropriate for adult problem-drinking drivers (Jacobs and Ulmer 1974). Selzer et al. (1972), however, reported that a surprising number of young drivers with multiple convictions for driving violations scored high on the Michigan Alcoholism Screening Test (MAST) which had been originally designed to identify probable adult alcoholics. The appropriateness of adult-based diagnostic criteria for younger youth, however, has been frequently challenged because most of the items in such tests are irrelevant for youth with little experience independent of the family and parental supervision.

Educational programs for youth have been largely public information or public school curriculums designed for inclusion in driver education or health education classes. Public information efforts have relied on the belief that adolescents depend on television, radio, and parents (in that order) for information about alcohol; peer sources of information, however, are known to become increasingly important as youth progress into high school (Hetherington et al. 1979). Most education programs, either through mass media or the public schools, are implicitly intended to prevent youth from drinking and driving or developing habitual driving after drinking (Swisher 1977). Infrequently, these programs have had other objectives, such as reinforcing the intervention of a passenger or friend to prevent a drinking youth from driving. Unfortunately, the explicit assumptions and objectives are generally unspecified (Goodstadt 1977; Swinehart 1972*a*,*b*; Williams et al. 1968). A recent finding that youth are more concerned about "injuring, crippling, or killing someone else" than other consequences of driving while intoxicated (including killing themselves) holds the potential for developing more sophisticated objectives for public education campaigns than have been developed to date (Easterling and Clay 1973). Public school and public information programs tend to be based

on the assumption that knowledge of the possible consequences of drinking and driving will promote nonuse. This assumption has been challenged by Brotman and Suffet (1975). Another difficulty with public school educational approaches is that the quality and quantity of teaching or presentation of information vary greatly, which subverts the probability of effectiveness of even the best curriculum or materials (Hames 1970).

One issue that has been addressed in both public information and public school programs is the effectiveness of recovered alcoholics, or youth offenders, as communicators in alcohol education. Clark and Porter (1979) reported that the recovered alcoholic is ineffective for youthful audiences. Similar conclusions have been found for other communicators such as entertainment celebrities, race car drivers, and others (Douglass et al. 1974*c*). The target audience is another factor which is as critical to public information efforts as it is to any other presentation strategy. There is considerable debate, however, about which youth should be in target groups for educational programs (Grey Advertising, Inc. 1975; Hames 1970; Miles and Clay 1977; Pelz 1972).

Most public information campaigns, if at all successful, have been able to increase awareness of drinking and driving and driving situations (Croke 1977; Kelly 1977; Miller 1976; Rosen et al. 1977). The potential success of efforts to encourage passengers, friends, and others to prevent a drinker from driving has been insufficiently tested. Although the advisability of this approach in all situations may be questionable because such third partners are frequently intoxicated (Waller 1972), the potential appropriateness of this approach has been repeatedly suggested (Grey Advertising, Inc. 1975; Hames 1970; Miles and Clay 1977; Schuman et al. 1967). Pelz (1972) indicated that once an individual develops problem drinking habits, rational educational approaches are unlikely to be effective. Persuading others to assume responsibility for preventing a drinker from driving may thus be one of the only educational objectives with a reasonable probability of actually reducing alcohol-related driving exposure or casualties. Other objectives aimed at underlying attitudes, beliefs, and values relevant to drinking, personal safety, and the safety of others are appropriate for more basic educational programs, those programs now designed to teach youth how to cope with a hazardous situation.

The mainstay of traffic safety education efforts directed at youth has been driver education programs in the schools. A number of curriculums developed in recent years have emphasized a variety of conceptual areas such as the responsible use of alcohol, health consequences of drinking and driving, legal consequences of driving while intoxicated, alcohol effects (behaviorally and physiologically), and other less area-specific topics, such as alcohol and food, or alcohol in history. These programs have been directed largely at high school youth (Blane 1975; Borkenstein et al. 1971; Faucette and Jacobson 1977; McPherson et al. 1976). Some efforts have emerged also in the junior high school, predriving years (Malfetti 1977). The appropriateness of using the driver

education or health education classroom as the context for education on drinking and driving has been undisputed by most public educators. The difficulty with these programs, however, is that it is not clear that driver education necessarily reduces any youth's probabilities of crash involvement, with or without alcohol. This belief is based on the hypothesis that such training increases driving exposure and brings more youth into the driving population at earlier ages than would occur without such training (Asher and Dodson 1970; Robertson and Zador 1977).

Next to public school programs and public information campaigns, the prevention activities youth are most likely to encounter are those based in the area of law enforcement and court-related treatment, rehabilitation, and education. As indicated above, the majority of these programs have been developed within the Alcohol Safety Action Project system under either Federal or local support and only a few have made major efforts specifically geared to youth. The direct consequence of an arrest for drinking and driving can include fines, jail sentences (for older youth), license suspension, compulsory treatment, or enrollment in a court-related or court-approved "alcohol school." In addition, insurance premiums frequently increase, youth have arrest records which follow them thereafter, and many families experience a combination of social and financial costs (North Atlantic Treaty Organization 1974).

The Alcohol Safety Action Projects have had a variety of effects as indicated by their project evaluations. Driving records after attendance in a court-referred school have shown some improvement regarding arrests for drinking and driving as well as for other violations. Short-term, temporary reductions in injury and fatal crash rates have been identified in places with an alcohol safety action project, and driving-after-drinking exposure has been reduced (Byrd 1977; Duffy and Herbert 1977; Hagen 1977; Krause 1977; Langland et al. 1977). The experience of these projects, however, suggests that youthful drivers are underrepresented as program participants because older drivers are more likely to be arrested for drinking and driving than youth. According to the Department of Transportation, the younger drinking drivers are more likely to be driving while intoxicated, yet less likely to be apprehended than older drivers. If police patrols are missing the younger highest risk drinking drivers in enforcement activities, it follows that this youthful target group would be underrepresented in court-referred programs (U.S. Department of Transportation 1972). In addition, Kern et al. (1977) reported that younger convicted drunken or alcohol-impaired drivers were most likely to drop out of an alcohol education program after they were enrolled, suggesting again that those who needed such programs most were the most likely to drop out. On the other hand, Rosenberg et al. (1976) reported that treatment outcomes are most successful with clients with less extensive involvement with alcohol, including youth. Thus, it appears that youth are highly appropriate for such activities, and their success is expected to be high if they can be retained for the entire program.

One program, in Utah, involved teenage offenders and their parents in a juvenile court alcohol school program. This novel approach resulted in increased knowledge among youthful offenders and their parents about alcohol, and a decrease in short-term recidivism (rearrests) for drinking and driving. Attitudes regarding alcohol among others in the family were unaffected by the program (Adams 1976; Glines and Byrd 1977). This program may be a model for future effects to integrate youth, alcohol, and traffic safety activities with the family environment, an area which has been widely neglected in the field.

The Minimum Legal Drinking Age

Public health has relied to a major extent on the use of laws and regulations to effect decreases in morbidity and mortality; however, the use of these mechanisms in the area of alcohol problems, and specifically such problems among youth, has not been a high social priority. The control of beverage alcohol, viewed as the agent in a public health model of prevention, is an expected and consistent public health response to a problem like alcohol-related traffic accidents; yet, unlike most other areas of public health, there has been a long history of resistance to the control of alcohol (Beauchamp 1976; Bruun et al. 1975; Moser 1979).

An opportunity to test the relationship of alcohol availability to alcohol-related traffic casualties emerged during the last decade; it may add some weight to arguments forcing a closer look at alcohol control as a means of prevention, at least for acute problems such as accident morbidity and mortality. In the early 1970s independent and popular support of lowering the legal age limits for voting rights in most States and in Congress led to an amendment to the U.S. Constitution in 1971 which gave persons aged 18 the right to vote in Federal elections. Within 4 years more than 30 States and Canadian Provinces lowered the local and State voting age to 18 and most also lowered the legal age of purchase for alcoholic beverages, usually from 21 to 18 or 19 (Douglass 1974*a*,*b*; Douglass and Freedman 1977; Smart and Goodstadt 1977; Whitehead 1977).

Although the alcohol abuse and traffic safety fields at that time were less developed than is true today, a number of researchers and practitioners were included in the process of lowering the legal drinking ages and attempted to predict the consequences of liberalized alcohol availability for youth. Without the research experience of the last decade, however, the fundamental information on which such predictions could be made was unavailable and the opinions of scientists and scholars were frequently based on little objective data or empirical research. An example of the attempts to anticipate the results of lower legal drinking ages on youth and traffic safety was a report to the White House Conference on Youth in 1973, before any data were available for

the time period after the legal drinking ages were changed (Bowen and Kagay 1973). The conclusions were that youth already drank frequently and in sufficient numbers that the status quo would be unaffected by making such widespread behavior legal. This conclusion was echoed by Zylman (1973*b*) in addition to an enumeration of anticipated spurious phenomena which would occur that might lead to an unwarranted belief that accidents among youth might increase. Zylman predicted that a more likely result would be increased police enforcement and reporting of youth, giving the appearance of an increase in traffic crashes in the absence of any actual increase.

During the period from 1973 through 1978 a considerable amount of research was generated throughout the United States and Canada dealing with the actual consequences of increased alcohol availability on the frequency of traffic accidents among youth, associated consumption, and alcohol-related problems such as arrests, school problems, and alcoholism treatment. Also, a heated and ongoing political and philosophical debate emerged which often clouded society's attention from the scientific work in progress. The studies of the lower legal drinking ages have provided a major addition to the understanding of availability increases and traffic safety which have led to many States' decisions to raise the legal drinking ages back to 19, 20, or 21. This social response has provided the opportunity to test control policies as a means of primary prevention of alcohol-related accidents in a public health context.

The first reports of the events following the reduction of legal drinking ages were based on little data and unscientific interpretations. While these reports were open to scientific challenge, they did raise the critical issues to be addressed in the more adequate studies that followed. Zylman (1974*a*,*b*,*c*; 1975) suggested that poorly controlled police reporting practices, increases in the population of young drivers, an overemphasis on the role of drinking in crash causation, and long-term cycles in fatal accident incidence were more likely to explain apparent increases in reported alcohol-related traffic crashes, specifically fatal, than the lower drinking ages. His position was that most youth are not involved in excessive drinking or resultant traffic crashes, and police actions were an overreaction to anticipated problems related to lower drinking ages. As Zylman anticipated, the earliest reports of increases in alcohol-related traffic accidents among youth in Michigan were based on official police reports and suggested large increases, over 100 percent, which added to the political debate and the call for scientific investigation (Hammond 1973).

The first and only study sponsored by the U.S. Federal Government to determine if the lowered legal drinking ages increased the frequency of alcohol-related traffic crashes was conducted by Douglass and associates (Douglass 1974*a*,*b*,*c*,*d*; Douglass and Filkins 1974; Douglass, Filkins, and Clark 1974; Douglass, Filkins, and Flora 1974). This study utilized statistical time-series analyses for young and old drivers involved in traffic accidents during the period between 1968 and 1973.

The legal drinking ages in Michigan, Maine, and Vermont were tested. All three of these States lowered the drinking age to 18 for all alcoholic beverages. Control analyses of the same measurements were conducted in New York and Louisiana with long-established 18-year-old drinking ages and Pennsylvania and Texas where the minimum drinking ages (at that time) remained 21. This study acknowledged the issues suggested by Zylman by controlling for potentially biased police reporting with a conservative and unbiased "surrogate" measure of alcohol involvement in addition to officially reported statistics. Cycles and population growth were also controlled through statistical procedures and the use of age-specific rates in addition to simple frequency data. Zylman's conclusions that no increase in alcohol-related crash frequencies resulted from the reduced legal purchasing age were challenged, however, and increases were found in Michigan and Maine of "statistical and social significance" (Douglass 1974*a*; Douglass, Filkins, and Clark 1974). Minimum increases of between 10 and 26 percent for alcohol-related crashes, among young drivers directly affected by the lower drinking ages, were found in Michigan and Maine, attributed to the legal changes; an increase of less than 2 percent was found in Vermont, however, which led these investigators to conclude that all places could not be expected to have the same response to a change in the legal drinking age. Clark (1973) found support for the Douglass et al. findings with analyses revealing a large increase in drinking and driving arrests among 18- to 20-year-olds in Washtenaw County, Michigan, subsequent to the 18-year-old drinking age. Wolfe and Chapman (1973) in a survey of high school students, also in Washtenaw County, reported that alcohol consumption quantity and frequency increased between 1970 and 1972. Clark et al. (1973), in comparative roadside surveys of drivers on the road at night, found a substantial increase in alcohol consumption among drivers in the age group affected by the 18-year-old drinking age.

These studies in Michigan were soon joined by others which produced similar conclusions. Williams et al. (1975) analyzed data from Michigan and Ontario where the drinking age for all alcoholic beverages was reduced from 21 to 18 and Wisconsin where wine and liquor were reduced to 18 (beer had been legal at 18 prior to the 1972 legislation). These places were compared to three border States including Minnesota, Illinois, and Indiana. The study concluded on the basis of reported statistics among fatal accidents that the legal change produced small, but statistically significant, increases in alcohol-related fatal accidents. A later study by Naor and Nashold (1975) found that the change from beer only to statewide availability of all alcoholic beverages at 18 produced no significant increase in alcohol-related fatalities in Wisconsin.

A Massachusetts study (Cucchiaro, Ferreira, and Sicherman 1974; Ferreira and Sicherman 1976), using time-series analyses with reported alcohol-involvement police data, found that drinking-related accidents

increased among 18- to 20-year-old drivers, and for fatal accidents the effect attributed to the lower drinking age was 40 percent.

In Ontario, Smart et al. (1972) reported an increase in alcohol consumption of 10 percent among affected youth following the 1972 change in drinking age to 18. Whitehead et al. (1974, 1975) studied all 16- to 20- and 24-year-old drivers in London, Ontario, and found increases in total reportable collisions following the lower drinking age for 16- to 20-year-old drivers, with increases of more than 300 percent for 18- and 19-year-olds in the first 24 months after the law changed (this large increase was at least partially due to the relatively low baseline frequencies of these events at the local level). These analyses resulted in recommendations for increasing the legal drinking age as part of a major effort to prevent alcohol-related traffic collisions (Ferrence 1977; Whitehead 1977; Whitehead and Ferrence 1976*a*,*b*). Schmidt and Kornaczewski (1975) studied alcohol-related traffic accidents subsequent to the lowering of the drinking age and concluded not only that the new law increased such accidents but also that programmatic efforts to prevent them are futile in the absence of societywide efforts aimed at drinking habits in general. Warren et al. (1977), however, suggested that, based on their analyses of reported alcohol-involved crashes in Alberta, Manitoba, Saskatchewan, and New Brunswick, Canada, the independent effect of the lower drinking ages could be confounded by an earlier change in the legal definition of driving while intoxicated, which reduced the allowable blood alcohol concentration and thereby increased the number of "drinkers" among the crash-involved drivers.

The response to these initial studies was a widespread call for increasing the legal drinking age and enforcement of laws governing alcohol sales to youth (Lazar and Lazar 1976; Leroy 1974; Ryback 1975; Yoakum 1979). These responses, however, were not initially met with enthusiasm by State governments and the general public was not substantially aroused.

A second series of reports and studies emerged after 1975 in Canada and the United States. Smart and Finley (1976) reported that one factor in an increase of youthful first admissions to alcoholism treatment programs in Ontario was the lower legal drinking age. Smart and Goodstadt (1977) summarized the state of knowledge of the effects of reduced legal alcohol purchasing ages and concluded that traffic accidents usually increased associated with pub or tavern and off-premise consumption of beer by youth.

A study conducted in Illinois (Mills 1977) concluded that the Illinois reduction in 1973 of the minimum age limit for beer and wine from 21 to 19 had contributed to additional fatal accidents. The author reported that 33 fatalities in the first year were directly associated with the legal change and concomitant increases in property damage and personal injuries were expected.

Followup studies in Michigan were concluded in 1977 and 1978 (Douglass 1979, 1980*a*,*b*; Douglass and Freedman 1977; Douglass and

Millar 1979). These studies determined that the increase in alcohol-related fatal accidents due to the lower legal drinking age was conservatively estimated to be at least 17 percent above the level expected for 18- to 20-year-old drivers in the first 4 years subsequent to the legal change. Wholesale increases in such accidents for 16- to 17-year-olds were not found throughout Michigan. At the same time no deviations from predicted levels were found for drivers aged 21 to 24 or older. Draft beer, rather than wine, bottle beer, or distilled spirits, was determined to be the beverage that was most likely associated with the casualty increase brought about by the lower drinking age. Flora and colleagues (1978) analyzed 9 years of Michigan data and concluded that reported alcohol-related, fatal crashes with 18- to 20-year-old drivers increased 53 percent after the legal drinking age changed. These authors reported an increase in the police-reported "had been drinking" rate for fatal-crash-involved young drivers while the same rates for older drivers remained stable or even decreased. This conclusion was reported also by the Michigan Office of Highway Safety Planning of the Michigan Department of State Police (Office of Highway Safety Planning 1977).

Reports from Ontario (Smart 1977; Smart and Fejer 1976; Smart and Schmidt 1975) presented evidence that high school alcohol consumption and beer consumption increased in places that lowered the legal drinking age between 1971 and 1973. A study of per capita consumption in Canadian Provinces, however, was unable to detect major increases in general beer consumption associated with the lowered drinking ages (Smart and Finley 1976). This study, however, like all studies of alcohol consumption with agency records, had no age-specific data. Also, the authors stated that the absence of a control Province made firm conclusions difficult (Smart 1980).

Whitehead (1977), in a study commissioned for the Canadian Minister of National Health and Welfare, concluded that all scientifically conducted studies of States and Provinces that found increases in traffic accidents due to the lower drinking ages were consistent and that these studies validated each other. The basis for Whitehead's comparative analysis on this topic was the scientific design and rigor of the research. He concluded that additional studies of these States and Provinces would further identify the public health impact of these legal changes. Whitehead stated that consideration should be given to raising drinking ages which had been lowered and stopping new initiatives to lower the drinking ages in additional States or Provinces.

Rooney and Schwartz (1977*a*,*b*) surveyed high school students in five northeastern States. These authors reported that 42 percent of seniors in States with 18-year-old drinking ages compared with 45 percent in States with 20- or 21-year-old limits reported consuming beer at least weekly. The conclusions drawn from their finding was that the minimum purchase age laws had not produced the controlling effects for which they (the laws) were intended. This association, however, failed to use a design that could test the effect of changing the legal

purchase age and relied on a static correlation to infer its conclusions. Rooney and Schwartz's conclusions conflict with those of Wolfe (1974). In a national roadside breathtesting survey (Wolfe 1974) 14.8 percent of the 18- to 20-year-old subjects were driving with at least .05 percent blood alcohol content in 18-year-old States compared with 10.8 percent in 20- or 21-year-old driving age States. Also, Maisto and Rachal (1980) reported on the basis of a national probability sample of youth systematic differences in adolescent drinking practices between 21- and under 21-year-old drinking States which challenged Rooney and Schwartz. Maisto and Rachal stated:

> Moreover, the data revealed that higher-drinking-age laws were related to less peer approval of drinking and less perceived peer drinking, less drinking and driving, less accessibility to alcoholic beverages, and less frequent intoxication. These aspects of the data. . .contrast sharply with the Rooney and Schwartz data. (p. 174)

Scientific research on lower legal drinking ages in most places has concluded that young drivers are more likely to become involved in alcohol-related traffic collisions. Not all places respond to lowering the legal drinking age in the same way. For instance, Douglass (1974*a*,*b*) found significant alcohol-related crash involvement in Michigan and Maine but not in Vermont. The literature also supports the conclusion that beer is most likely to be implicated.

These findings do not address the basic issues of the difference between youth drinking habits in one State or another, as raised by Rooney and Schwartz; differences could exist independently of legal conditions. The question of importance, however, is whether lowering the legal age results in injuries and fatalities in alcohol-related crashes—a question which appears to be answered affirmatively in a variety of studies with complementary methods and analysis approaches, several distinct study sites, and by several independent investigators. The consequences of raising the legal drinking ages as a means of prevention has not yet been fully evaluated. In that it has been generally concluded that increasing availability for youth resulted in higher frequencies of alcohol-related traffic crashes, the expectation is that the reverse will be true. This has been tested, to date, in only two studies. Voas and Moulden (1980) reported that single-vehicle, nighttime accidents with a male driver (a measure comparable to Douglass' three-factor surrogate for alcohol-related crashes) decreased significantly after Maine raised the legal drinking age in October 1977. These data, however, as noted by the authors were too limited to control for possible confounding factors including seasonal and weather effects or fuel prices.

A more satisfactory test of the effect of raising the legal drinking age has been reported by Wagenaar (1980*a*,*b*). This work, part of the ongoing series of studies at The University of Michigan, evaluated the first year's experience in Michigan after the legal drinking age was raised in December 1978 to 21. Wagenaar used a multiple interrupted

time-series, a census of all reported traffic accidents in Michigan between 1972 and 1979, and advanced Box-Jenkins time-series statistical techniques. On the basis of the three-factor surrogate measure (Douglass 1974*a*), the 18- to 20-year-old drivers in Michigan had 17.7 percent or 1,650 fewer alcohol-related crashes in 1979 than were predicted. On the basis of the officially reported alcohol involvement variable, the benefit was a remarkable 30.3 percent reduction. At the same time, 21- to 45-year-old drivers had more alcohol-related crashes than predicted, and non-alcohol-related crashes were below the predictions for all age groups, probably due to the 1979 economic downturn in Michigan. In November 1980, after a heated and emotional campaign by a consortium of alcohol industry interests and selected State government officials, Michigan voters rejected a ballot proposal to lower the drinking age to 19, this electoral decision was influenced by the release of the findings of Wagenaar's study in October 1980.

Research is currently being conducted on the increased legal drinking ages in Michigan, Maine, and Massachusetts, under NIAAA sponsorship. These analyses will provide a more thorough scientific basis for concluding if reduced alcohol availability, by way of higher legal drinking ages, consistently leads to a prevention of alcohol-related crashes among youth.

Essential Research in Youth, Alcohol, and Highway Safety

The state of knowledge in this area, as reviewed in the discussion above, is generally descriptive. While we know that certain types of youth in certain kinds of situations and circumstances are more likely than others to be involved in alcohol-related traffic accidents, this knowledge is based entirely on retrospective studies of various designs. The predictive value of this body of information is limited because the variables studied and the designs of the research conducted are neither precise enough, nor sensitive enough, to accurately identify individuals, in advance, at elevated risk of an alcohol-related crash. Thus the current scope of appropriate strategies to reduce youthful, alcohol-related casualties is limited and is likely to have limited effectiveness. This situation will persist until more research is produced which leads to more sophisticated understanding of the causes and precursors of the problem area. In the field of alcohol, youth, and highway safety, many questions remain unanswered and several issues have been virtually untouched by the research community. The list of research that would be useful to the field would be very lengthy; however, a more concise list of the most critical of these is discussed here.

The principal justification for national support of research in alcohol, youth, and highway safety is the assumption that with scientifically diverse insights, some solutions to the problem will emerge. This

applied research perspective in no way diminishes the value of more basic research in the area which also contributes to the broader body of knowledge of youth behavior and youthful culture, in addition to other research areas. From the applied, problem-oriented perspective, however, it is clear that the basically descriptive nature of the existing literature is inadequate for a concentrated effort to reduce the magnitude of this major health problem of youth. If the goal is to prevent traffic accidents from occurring, then certain research areas emerge as priorities.

The precrash drinking and driving situations that lead to alcohol-related crashes with young drivers have not been adequately researched. Prevention requires an understanding of the precrash circumstances involving youthful drinkers because, particularly with youth, the problem is more likely to be caused by acute situational factors than by long-term developmental problems. Precrash research that is psychological, sociological, or of a broadly social scientific perspective is appropriate. Research questions might include why certain youth drink, how they drink, what they drink, and why they drive after drinking.

A related area of inquiry deals with the motivations and psychological factors that determine drinking practices among youth and that are amenable to educational modification. Although many reports and popular articles suggest cultural reasons for the prevalence of drinking and driving among youth, the actual motivational and other psychological factors determining these behaviors have not been sufficiently studied. Educational programs, if they are to be successful, depend on substantially more research in this area.

The environment in which youthful drinking and driving take place is not well understood. Part of the environment includes the availability of alcohol to youth; the principal research area in this regard during the last decade has been the legal drinking age. Several of the States that lowered their legal drinking ages have subsequently raised the legal age because most places that lowered the drinking age experienced increases in alcohol-related traffic accidents among young drivers. The recent increase of age of purchase provides a rare natural experiment of the effects of alcohol availability on a specific kind of morbidity and mortality. The States that have raised their legal drinking ages should be rigorously evaluated regarding the impact on drinking and driving and subsequent crash involvement among youth.

It is likely that by the time youth reach legal drinking age they have fairly well established attitudes, and perhaps habits, regarding alcohol and drinking. Efforts to modify behavior in order to reduce alcohol-related traffic accidents, therefore, might need to be initiated well before youth are able to legally drive or drink. Attention should be given to young people before they establish drinking and driving habits. Thorough research should seek to understand the attitudes and beliefs about drinking and driving among youth aged 10 through 15.

More than any other group, youth attend to and are influenced by mass media. Media and educational approaches that are effective with young drivers have been modeled on adult themes and messages. New knowledge of the beliefs and perspectives on drinking and driving by youth has not been incorporated into field tests and has not been evaluated for behavioral or attitudinal impact. This area is of immediate importance because, given the state of practice in alcohol and highway safety, a large proportion of all prevention activities will continue to be media and educationally based. It is clearly essential that we learn how to use these approaches effectively.

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Chapter 8

Current Status of Alcohol Education Programs for Youth

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Abstract

The two general approaches which characterized alcohol education in the 1970s—education aimed at general youth populations and education aimed at special youth populations at risk of developing alcohol problems—remain applicable to current alcohol education programs. In addition, some current programs attempt to influence youth indirectly by targeting education at adults who interact with youth. Programs for general youth populations range from alcohol-specific programs which focus on provision of information about alcohol to non-alcohol-specific programs which concentrate on enhancing the health and personal development of participants. The majority of current programs for general youth populations lie between these two ends of the continuum. They combine an informative approach with an affective approach designed to facilitate exploration of feelings, attitudes, and values related to alcohol.

The major methods used by these programs include values clarification, decisionmaking, training of peer instructors and leaders, and teacher training. Programs for special youth populations are targeted toward children of alcoholics, disadvantaged minority youth, and delinquents, dropouts, and youth with family problems. Programs for adults who interact with youth are targeted at families, parents, teachers, and youth professionals. Evaluations of alcohol education programs for youth conducted to date reveal some positive effects on knowledge levels and attitudes. Indications of behavioral effects are much more limited. Conclusions regarding the effectiveness of current alcohol education programs await further results from ongoing evaluations, as well as refinement of evaluation methods. Standardized outcome measures, longitudinal data, and appropriate research designs are needed. Other future needs and trends in alcohol education programs for youth include parental involvement, development and implementation of programs at the State level, gearing of program methods and materials to the developmental levels and other characteristics of target groups, and a more comprehensive school-community approach to alcohol education.

Introduction

This paper provides an overview of current school and community alcohol education programs for youth under the age of 18 years. It is based largely on published literature appearing between 1977 and 1980. The paper presents descriptive information on a variety of programs within categories based on target group served and program content. In a separate section, it discusses the effectiveness of alcohol education programs in the prevention of alcohol problems, based on published evaluation data obtained by the programs themselves. Finally, the paper reviews recent opinions concerning future trends and needs in alcohol education.

As the 1980s begin, the prevention of alcohol abuse and alcoholism by means of alcohol education programs directed toward youth is both a public concern and a concern of many professionals in the alcohol field. Alcohol education programs and literature concerning alcohol education are at least as abundant now as they have been in past years. However, the fact that the literature is still characterized by discussions of the problems encountered by alcohol education programs and by recommendations for program expansion and alteration suggests that implementation of effective alcohol education on a wide scale remains a challenge.

Several reviews of the status of alcohol education as of the mid-1970s indicate that progress has been made toward preventive alcohol education since that time. In her historical review of ideas concerning alcohol education, Milgram (1976*b*) noted that the decade of the 1970s was the most prolific period for research and discussion about alcohol education. However, the discussions were characterized by lack of consensus about proper goals and methods. The traditional "evils of alcohol" approach was still recommended by some, while others called for objective education about alcohol. Teachers remained generally uncomfortable about, and unprepared for, the role of alcohol educator. Milgram (1976*a*) concluded that objective alcohol education was not yet a reality in the 1970s.

Trends in alcohol education in the mid-1970s included embedding alcohol education efforts in larger educational enterprises, as opposed to "one-shot" presentations of information which often characterized earlier alcohol education (Blane 1976). In addition, increased attention began to be paid to defining specific target groups and outcomes appropriate for those groups. Two general approaches to prevention of youthful abuse could be discerned at this time—a primary prevention approach aimed at general populations of youth and a secondary prevention approach aimed at minimizing alcohol abuse among groups at special risk for developing alcohol problems (Blane 1976).

Surveys of alcohol-related programs as of the mid-1970s indicated widespread interest in alcohol prevention and education for youth, but a lack of concentrated, comprehensive effort in this direction. A nation-

wide survey of treatment, prevention, and training programs funded by the National Institute on Alcohol Abuse and Alcoholism (NIAAA) as of 1976 found that 70 percent of 248 programs provided some educational services to youth (Cavanaugh et al. 1976). These services were typically provided in schools. Eighteen of the programs surveyed were specifically designed as prevention programs; of these, 50 percent provided education services to senior high schools; 50 percent to junior high schools; 44 percent to elementary schools; 56 percent to church groups; and 25 percent to community youth groups. However, only 11 percent of these prevention programs expended between 75 percent and 100 percent of their total educational and preventive effort in serving youth (Cavanaugh et al. 1976).

The development of comprehensive, coordinated alcohol education programs at the State level has likewise been slow. Before the mid-1970s, few statewide education and prevention plans had been developed. Implementation of such plans was even less prevalent. The lack of State action may be attributable to the traditional diffusion of responsibility for alcohol education among national, State, and private organizations.

More recent reviews of federally funded projects and State initiatives indicated increased emphasis on youth as a target for preventive efforts in the late 1970s. A review of 21 prevention demonstration projects funded by NIAAA beginning in 1974 determined that 12 of the projects were targeted at adolescents or children (Staulcup et al. 1979). An analysis of data from the State Alcoholism Profile Information System (covering 49 States and 15 national information sources) revealed that new initiatives being developed by States included preventive services for youth and training of teachers to provide alcohol education (Jones and Harper 1978). An analysis of all State plans for alcohol abuse and alcoholism for 1979-80 indicated that young people were included as a target group in 32 of 51 State plans (National Institute on Alcohol Abuse and Alcoholism 1980*b*). Alcohol education or prevention programs for youth were listed among State priorities in 12 State plans and were listed elsewhere in 10 plans. Four States (Kentucky, New York, Oklahoma, South Carolina) now require alcohol education in the public schools.

A recent analysis of 854 alcohol education materials published between 1973 and 1979 indicated an increase in both the quantity and quality of materials in the late 1970s (Milgram, 1980). However, although the concepts included in the materials and the intended audiences have expanded, a disproportionately small number of materials are directed toward elementary, junior high, and college students. In addition, while three-fourths of the materials for college students were rated as being good, only two-thirds or less of the materials for younger students were rated as being good. A similar analysis conducted on 68 curriculum guides published between 1973 and 1979 revealed that the number and quality of these guides increased substantially in the 1970s relative to earlier periods (Milgram

in press). Most guides are targeted at the K-12 levels, and 79 percent of these were rated as being good. An improvement in the quality of specific major concepts treated in the guides was also found. Milgram (in press) concluded that alcohol education will improve and be increasingly stressed in the 1980s.

The recent scientific and popular literature also includes numerous recommendations for the provision of alcohol education to both general and specific populations of youth; this indicates a perceived need for continuation and expansion of alcohol education services (Hames 1977; Von Holdt 1977). Statements of the need for alcohol education have emanated from a variety of professionals and government officials. At least one authority on prevention of alcohol problems has deplored the lack of "serious thinking" about prevention in the United States and has contended that present social conditions are right for mounting a serious preventive effort (Bacon 1978).

The providers of alcohol education and its youthful consumers have also expressed a need for improvement in, and expansion of, preventive alcohol education services. A survey of alcohol-related programs funded by NIAAA found that 50 percent of the programs viewed education as an unmet need for youth services, and 12 percent planned to begin providing educational services to youth within the succeeding year (Cavanaugh et al. 1976). In a needs assessment survey of 84 schools in Michigan, conducted by the Michigan State Office of Substance Abuse Services, an overwhelming majority of respondents favored substance education for students, parent education, and youth agency-school consultation (Vissing 1978).

Similar results were obtained in a survey of providers, consumers, and others concerning the mental health needs of adolescents (Nuttall et al. 1977). Alcohol-abuse-related services were considered the most pressing general need by mental health providers, consumers (adolescents and parents of adolescents), and other groups such as youth workers. School personnel viewed alcohol abuse as the fourth most important need area. The authors noted that alcohol abuse has not been a priority of youth mental health professionals in the past and that these professionals have not received training in this area.

In addition to recommendations for education directed toward youth in general, various proposals have been made in recent years for preventive education for special populations of youth who are seen as being at risk for developing alcohol problems. Such special populations include children of alcoholics (Chafetz 1979; Kern et al. 1977; Maloney 1976), potential and actual school dropouts (Burkett and White 1976), delinquents (Braxton 1978), minority children and children with family problems (National Nurses Society on Alcoholism 1978), and exceptional children (Floyd and Lotsof 1977).

Current Alcohol Education Programs

The two general approaches that characterized alcohol education in the mid-1970s—education aimed at general youth populations and education aimed at special youth populations at risk for developing alcohol problems—remain applicable to current alcohol education programs. In addition, a number of programs attempt to influence youth indirectly by targeting their efforts at adults who interact with youth.

Programs for General Youth Populations

Alcohol education programs for general youth populations range along a continuum of specificity with regard to alcohol-related content. Some programs focus on provision of information about alcohol. At the other end of the continuum are programs that include relatively little or no information or discussion about alcohol. These programs concentrate on facilitating the personal development of participants or providing alternatives to alcohol use.

The majority of current alcohol education programs lie somewhere between these two ends of the continuum. Traditional factual approaches to alcohol education assumed that awareness of facts about alcohol would lead to abstinence or to responsible use. As the limitations of these approaches became apparent, many programs began to combine an informative approach with an affective approach designed to facilitate the exploration of feelings, attitudes, and values about alcohol. These "mixed" programs vary in the amount of attention paid to specific alcohol content and information, on the one hand, and to more indirect methods such as improving decisionmaking skills, on the other.

Alcohol-Specific Information Programs

Several examples of the alcohol-specific, information-giving approach to alcohol education can be found among current alcohol education programs. In some cases, "didactic," or "facts only," alcohol education is provided as one alternative in research-oriented programs designed to evaluate the relative effectiveness of different approaches to alcohol education. This was done in a program for sixth graders conducted in five suburban schools in California (Blum et al. 1978). One group of children received didactic alcohol education; another group received "process" education, including clarification of values; a third group received a combination of these two; and a fourth group involved parents and students and was to have had a parent-designed curriculum. In addition, half of the classes in each mode were taught by program staff, while the other half were taught by regular teachers. The effectiveness of the methods was found to vary according to prior use levels. Another example of such a program is the TRENDS program for sixth graders developed by a public school system in Georgia in 1974-

75. The TRENDS program compared the effectiveness of a factual lecture method to that of a method focusing on values clarification (Sadler and Dillard 1978). Students showed a modest preference for the values approach, although knowledge gains did not differ according to method used.

Other programs offer only an informational approach to alcohol education. Many of these take place in junior and senior high schools. The information imparted may include the nature and effects of alcohol (Tommasello 1977) or answers to student-generated questions (Simon and Moyer 1976). Some include presentations by pharmacologists (Tommasello 1977) or toxicologists (Simon and Moyer 1976). Often, they focus on the dangers of alcohol and drug abuse as well as on sources of treatment for problems related to substance use (Brodie and Manning 1976). Drinking-driving topics are frequently covered (Laemmle 1980). Improvement in alcohol-related decisionmaking skills may also be a goal of informational programs (Simon and Moyer 1976; Tommasello 1977).

Informational programs also occur in elementary school settings. One such program is conducted by the Alcoholism Council of Tompkins County, N.Y. (Alcoholism Council of Tompkins County n.d.; Laemmle 1980). The Council works with elementary, junior high, and senior high schools that wish to develop an alcohol education program or supplement an existing curriculum. It has developed a puppet play titled "Giraffe Learns About Alcohol," which is presented at area schools and involves student participation (Laemmle 1980). The Council has also designed a 5-day miniunit, which to date has been used with 130 students in seventh-grade health classes. The alcohol education programing developed by the Council is evaluated through presurveys, postsurveys, and other data (Laemmle 1980).

Some programs that emphasize an informational approach are carried out in community settings. The program sponsored by the Children and Youth Division of the American Legion tries to give youths the facts about alcohol so they can "judge for themselves" whether or not to drink ("American Legion Promotes" 1978). This program utilizes such methods as "alcohol awareness weeks," media announcements, and speakers at community meetings to achieve its goal of prevention of alcohol problems among youth.

Programs that concentrate only on factual information about alcohol are less prevalent among current programs for youth. However, their effectiveness has yet to be determined conclusively, as witnessed by recent efforts to compare such an approach to the newer affective approaches.

Combined Informational and Affective Programs

Programs that combine informational and affective goals and methods may include provision of facts about alcohol, discussion and exercises designed to facilitate decisionmaking and exploration of

feelings and values, and a variety of other methods that may be only indirectly related to alcohol use. These programs are based on the assumption that mere knowledge of facts about alcohol is not sufficient to influence behavior in positive directions. They also assume that considerable direct attention to alcohol and drinking is necessary in order to affect alcohol-related behaviors specifically. The overriding goal of these programs is to facilitate the responsible use or nonuse of alcohol so that alcohol-related problems, alcohol abuse, and alcoholism will be prevented. Since these programs ultimately aim to influence behavior, they attempt to instill attitudes and values toward alcohol that will be compatible with desired behaviors.

The major methods used in combined informational and affective programs include values clarification, decisionmaking, training of peer instructors and leaders, and training of teachers. Programs may utilize one, some, or all of these methods to reach their goals of responsible use or nonuse of alcohol. Current combined programs will be described under each category of methods that they use.

Values Clarification. Values clarification is one of the most frequently used methods in combined programs. Values clarification can include exploration of the type of person one wants to be, life values, and means of fulfilling needs that are compatible with those values. Decisions about alcohol are explored in terms of issues such as which behaviors fit one's value system and what alternatives to drinking exist.

One of the most well known alcohol education programs that places considerable emphasis on clarification of values about drinking is the YMCA Youth Values Project (Markell 1975). This community-based project is based on the idea that the family unit is the primary force in value formation among elementary-school-aged children, although the peer group increases in importance in the latter half of this age range. Accordingly, the program involves both a "valuing youth" and a "valuing families" component. The method used in the former component is the formation of small groups with young adult leaders in afterschool club, team, and day camp settings. Specific exercises focus on value issues, and group interaction, together with the support of the group leader, facilitates the process of values clarification. The "valuing families" component involves training for parents and children in communication and decisionmaking. Another community program located in a rural area of New York provides a junior and senior high school curriculum that stresses both factual information and values clarification (Community School District 24 n.d.).

Several programs in school settings use values clarification. The alcohol and drug education policy formulated for New York has as one of its goals the provision of opportunities for values clarification and exploration of alternatives (Packer 1976). In 1976-77, at the State University of New York at Buffalo, a program was developed for college students that is adaptable to high schools and other settings. It includes field experiences, a cognitive phase, and an affective phase which is gradually integrated with the cognitive phase (Dennison et al. 1977).

The affective phase involves identification, exploration, and clarification of values, feelings, and attitudes. The Maryland State Department of Health and Mental Hygiene (1974) has developed a K-12 curriculum on alcohol and traffic safety which also addresses a broad range of other issues. It stresses values exploration and helping students identify needs and recognize the role alcohol plays in their lives. This curriculum appears on a selected list of curriculums compiled by NIAAA (1980*a*).

Another school-based program, in a junior and senior high school near Pittsburgh, Pa., includes expression and exploration of values as part of alcohol education classes and other activities designed to encourage responsible use of alcohol (University of Pittsburgh 1980). Similarly, the 8:30 Monday Morning program for grades 7-12, developed by the American Business Men's Research Foundation and the California Council on Alcohol Problems (1977), focuses on values and lifestyles as two of six concepts upon which the program is based. The curriculum covers values input, values awareness, and values clarification and emphasizes active student involvement in classroom activities related to these and similar topics, such as lifestyles and alternatives. This program is also noteworthy for the degree of emphasis placed on abstinence as a viable alternative to alcohol use. Its curriculum is flexible, complete, and designed to interest and involve adolescents. Finally, two programs for sixth graders in California and Georgia offer a values clarification approach as part of an experimental design which compares the effectiveness of different types of alcohol education (Blum et al. 1978; Sadler and Dillard 1978).

Decisionmaking. Facilitation of both general decisionmaking skills and those specifically related to alcohol is another method widely used in combined affective and cognitive programs. A comprehensive, longstanding program devoted to teaching responsible decisionmaking is CASPAR, a community- and school-based program in Somerville, Mass. (CASPAR 1980; DiCicco 1978; DiCicco et al. 1977; Staulcup et al. 1979). Through its sequential Decisions About Drinking curriculum for grades 3-12, workshops, and community activities, this program aims to prevent excessive drinking, drunkenness, and irresponsible behavior and to encourage responsible decisionmaking among young people (DiCicco 1978; DiCicco et al. 1977).

Through the involvement of parents, teachers, professionals, and other members of the community, CASPAR attempts to influence social norms that are seen as central to prevention of alcohol problems (National Institute on Alcohol Abuse and Alcoholism n.d.). Some of the distinguishing characteristics of the CASPAR curriculum are its emphasis on exploration of attitudes and decisions, its flexibility, and the detailed resource materials available. The degree of community and school support achieved by the program since its inception in 1970 is another unusual feature (DiCicco et al. 1977). Community-based activities with both children and adults are a major component of the program.

Another comprehensive program that emphasizes decisionmaking is Here's Looking at You (Mooney et al. 1979; NIAAA n.d.). This program originated in King County, Wash., in 1975 and is now being used in many States in the Northwest and elsewhere. It is the official program of the States of Washington and Alaska (Alaska Council on the Prevention of Alcohol and Drug Abuse 1980). The program is notable for the fact that its sequential curriculum encompasses all grades between K and 12 (NIAAA n.d.). Different skills receive varying emphasis at different grade levels, with decisionmaking emphasized through the junior high school level (Mooney et al. 1979). In addition to decisionmaking, the Here's Looking at You program includes alcohol information, coping skills, attitudes, and self-concept. The curriculum's major themes are repeated throughout the grades using developmentally appropriate activities. The curriculum guide is detailed and is accompanied by all materials, e.g., films, games, and puppets, needed to present activities (NIAAA n.d.). The curriculum is flexible and can be used to integrate alcohol education into a variety of subjects (Mooney et al. 1979).

The MAP Project in Pittsburgh also uses decisionmaking as one method of fostering responsible use of alcohol (University of Pittsburgh 1980). Its classroom alcohol education component for senior and junior high school students uses exercises designed to help students explore their own and others' attitudes and feelings toward alcohol and to make decisions about their drinking behavior.

An alcohol education program developed for University of Florida students that is based on responsible decisionmaking has been applied to junior and senior high school students (Gonzalez and Kouba 1979). The program's developers note that evidence from drug and alcohol education efforts indicates that decisionmaking skill is as important as information about alcohol in determining responsible use (Gonzalez 1978).

The same philosophy characterizes the 8:30 Monday Morning program developed for grades 7-12 (American Business Men's Research Foundation 1977). Among the six concepts on which curriculum activities are based are lifestyles, decisions, and alternatives. All activities emphasize student participation. This program is being used in a number of States with State and private funding.

A program originating at the University of Arizona and targeted at high school students used an innovative method to teach responsible decisionmaking (Calmes and Alexander 1977). An adult leader worked with high school drama groups to produce original slide-tape presentations outlining the students' ideas about responsible decisions regarding alcohol. Another somewhat unusual approach to decisionmaking characterizes a program developed for rural junior high school students (Fullerton 1979). This program is based on the "rational self-counseling" model of psychotherapy, which holds that thoughts and emotions are self-controlled. The program offers guidelines for rational thinking and explores the nature of rational versus irrational decisions about alcohol.

Other programs that emphasize decisionmaking include one located in Newton, Mass., that serves elementary school students (Stephen and DiMella 1978). This program for fourth through eighth graders integrates into the entire curriculum decisionmaking exercises and other activities related to alcohol and other concerns of this age group. Another program which emphasizes rational thought and responsible decisionmaking about lifestyles was tested in three middle schools in Houston, Tex. (Rose and Duer 1978). Techniques used in the program's Pattern of Healthful Living curriculum include pupil participation in small group discussion and decisionmaking about "dilemma situations." Finally, the Options program, which combines information and decisionmaking skills training, has been implemented with youth of various ages throughout the United States (Little 1978).

Traffic safety education for junior and senior high school students also focuses on developing decisionmaking and problem-solving skills (Malfetti 1977; McPherson et al. 1976). Widely disseminated kindergarten through 12th-grade curriculum materials on alcohol and traffic safety, developed for the Department of Transportation, emphasize both cognitive and affective skills, including decisionmaking (Faucette and Jacobson 1977; Finn and Platt 1972). Another traffic safety module that uses decisionmaking training has been developed for junior high school students on the assumption that children in this age group are beginning to form attitudes toward alcohol and driving and are also more amenable to adult guidance than older students (Malfetti 1977). Finally, the AL-CO-HOL course for grades 7-9 developed by the AAA Foundation for Traffic Safety (1978) focuses on drinking-driving and encourages students to examine their attitudes and behavior as well as to acquire information. The AL-CO-HOL and Finn and Platt (1972) programs appear on a selected list of alcohol-specific curriculums compiled by NIAAA (1980*a*).

Several community-based programs also emphasize responsible decisionmaking. These include the national program developed by the PTA, which focuses on the family (Kimmel 1976; National Congress of Parents and Teachers n.d. *a*), as well as a curriculum unit for grades 4-6 designed by the Michigan PTA (National Congress of Parents and Teachers n.d. *b*). Nine model programs developed by the Boys' Clubs of America Alcohol Abuse Prevention Project have as a major goal the fostering of responsible decisionmaking about alcohol use (Staulcup et al. 1979). The applicability and operational feasibility of these models were tested during the 1977-78 project year. In addition, an *Alcohol Information Module* published by the American Red Cross for use with adolescents in community and school settings focuses on helping adolescents make responsible decisions about alcohol (Maloney and Smith 1979).

Peer Leadership Training. The use of peer modeling and peer leadership to effect changes in children's and adolescents' attitudes and behavior toward alcohol characterizes many combined affective and cognitive programs. One of the major components of the CASPAR

program is peer leader training for high school students (DiCicco 1978; DiCicco et al. 1977). To date, 35 students have served as peer leaders (CASPAR 1980; DiCicco 1978). Each peer leader serves for 2 years and receives a salary (National Institute on Alcohol Abuse and Alcoholism n.d.). Training lasts for 15 weeks and focuses on group dynamics, leadership skills, and facts about alcohol and alcoholism. Peer activities are highly structured and integrated into both school and community activities (National Institute on Alcohol Abuse and Alcoholism n.d.).

The MAP Project also trains senior high school peer leaders to co-lead a miniature version of the staff-led alcohol education classes for junior high school students (University of Pittsburgh 1980). Peer leaders in this program also teach didactic alcohol education units of the health education curriculum to younger students. The University of Florida Alcohol Abuse Prevention Program, which has been used with high school students, also includes peer-led small group discussions as a method (Gonzalez 1978; Gonzalez and Kouba 1979).

Other programs that use peer training and peer-led education as methods are the Options program (Little 1978), the Educational Impact Program of the Delaware Alcoholism Council Volunteer Program (Delaware Alcoholism Council n.d.), and the TRENDS program for sixth graders (Sadler and Dillard 1978). In the TRENDS program, 100 seniors, juniors, and sophomores were trained as "teen counselors" by TRENDS staff and volunteer professionals from the community. Teams of "teen counselors" then presented values-oriented alcohol education to sixth graders, and the effectiveness of teenager-led education was compared with that of teacher-led classes. Students indicated a strong preference for teenaged over adult teachers (Sadler and Dillard 1978).

Alcohol education programs based in the community often utilize peer leadership techniques. The Boys Harbor program based in New York City uses peer training and education as its major approaches to primary prevention among children and youth (Staulcup et al. 1979). The YMCA Youth Values Project uses young adult group leaders in its "valuing youth" component (Markell 1975). The Boys' Clubs of America program trains peer counselors (Staulcup et al. 1979), and the American Red Cross Youth Services Alcohol Information Module is designed to be implemented by adults, college-aged persons, or high school students (Maloney and Smith 1979).

A community program initiated by the Illinois Alcoholism and Drug Dependence Association is based on the philosophy that youth itself can be a valuable resource in prevention programs targeted at youth (Operation Snowball 1978). Operation Snowball provides a 3-day training program for adolescents from both urban and rural school districts, as well as for out-of-school youths who are connected with a community agency. Training covers facts, communication, values clarification, decisionmaking, and planning skills. Those who complete the training return to their communities to conduct alcohol education projects in school and community settings.

Teacher Training. Some programs include an extensive teacher-training component designed to develop a cadre of well-informed and motivated adults who can conduct alcohol education in school and community settings and continue programs started with external funds. The CASPAR program has teacher training as one of its major components (DiCicco 1978; DiCicco et al. 1977; Staulcup et al. 1979). Teacher-training workshops covering cognitive and affective areas are given six times a year (DiCicco 1978). The 20-hour workshops feature discussion, role-playing, and exercises in clarification of attitudes. A 20-hour advanced course for graduates of the basic workshop focuses on alcohol education methods; it allows teachers to practice and evaluate methods in their own classrooms and in the course (DiCicco et al. 1977). More than 150 teachers and other school personnel have been trained to date (CASPAR 1980).

The Here's Looking at You program also places considerable emphasis on teacher training at both the elementary and secondary levels (Staulcup et al. 1979). Over 900 teachers have each received at least 21 hours of training, and a 300-page training manual and teacher's packet have been developed (Roberts 1980). Teachers participate in 20 to 32 hours of workshop training before they implement the curriculum (Mooney et al. 1979). Training employs a multimethod, multimedia approach in which teachers learn affective education techniques through example and participation (NIAAA n.d.).

Similarly, a program developed by the Johnson Institute in Minneapolis, Minn., for use in 15 school districts emphasizes the importance of training teachers and other school personnel in order to build internally supported, continuing alcohol education in the schools (Crowley 1978). Other programs that focus on teacher training include the Options program (Little 1978), the Delaware Alcoholism Council Volunteer Program (Delaware Alcoholism Council n.d.), a drug education policy developed for New York schools (Packer 1976), a program for fourth through eighth graders in the Newton, Mass., public schools (Stephen and DiMella 1978), and the "rational self-counseling" program developed for rural youth in Maine (Fullerton 1979).

Of course, all alcohol education programs necessarily include some type of training for their own staffs, teachers, or other adults. In addition, experimental programs designed to compare the effectiveness of different educational approaches may offer brief training to regular classroom teachers in the methods being tested (e.g., Sadler and Dillard 1978; Schlegel 1977).

In summary, most current alcohol education programs, including some of the most well established programs, use the combined cognitive and affective approach. Several of the combined informational and affective programs described above have been listed among alcohol-specific curriculums selected by NIAAA (1980*a*) as being of high quality. These include CASPAR's Decisions About Drinking curriculum, the Here's Looking at You program, and the 8:30 Monday Morning program. Many of the programs use similar techniques, including values

clarification, decisionmaking, peer leadership training, and teacher training. They are also united in their goal of facilitating responsible behavior toward alcohol.

Non-Alcohol-Specific Programs

Some preventive programs directed toward youth focus on non-alcohol-specific content. These programs, while similar to the combined cognitive and affective programs, emphasize indirect prevention of alcohol problems through facilitation of personal development and general health education. Such programs are based on the philosophy that young people who have positive self-concepts, who are well adjusted, and who have developed personal and social skills are less likely to use alcohol to fulfill their needs or to abuse alcohol if they do decide to drink. Thus, these programs bypass direct attention to alcohol issues in favor of more general programing. Examples include a program for elementary school children in grades 2 through 6 conducted in Wisconsin (Hoyt 1976). The goals of this program are to help students feel better about themselves, to teach problem-solving skills, to provide information, and to stimulate healthful attitudes. Its components include curriculum development, teacher training, and alcohol education in the classroom. The teaching is designed to be humanistic, with emphasis on the teacher's nonjudgmental approach and facilitation of an atmosphere of trust and teacher-student interaction.

The Shalom program for high school and elementary school students in Catholic and public schools in Philadelphia has among its goals the facilitation of personal strengths and interpersonal skills and the fostering of "human dignity and personal growth" (Shalom 1979). The program's philosophy is that negative behaviors such as drug abuse can be prevented by personal growth. Methods include general educational programs; groups dealing with decisionmaking, self-awareness, and communication; alternative activities groups; and peer leadership training. Summer student services, staff training, and parent education are also offered.

A similar personal-development-oriented alcohol education program is offered to students at a private school in Andover, Mass. (Kubler-Merrill 1978). This program uses small group discussions, seminars, and courses to reach its goals of self-awareness, personal growth and well-being, development of life skills, and healthy interpersonal relationships. Students in the 11th and 12th grades are trained to be peer leaders of a course in human relations.

A community-based program in Philadelphia focuses on age-staggered peer counseling as a method for increasing the psychological and social skills of elementary, junior high, and senior high school students (Blane 1977). The program takes place after school in a neighborhood youth center; it also functions as a work program since all participants are paid.

Other non-alcohol-specific programs emphasize activities designed both to improve personal and social skills and to serve as alternatives to alcohol use. Examples of such programs are Project Do, a program which involves youth in activities that help others; a work-study program entitled Education for Parenthood, in which adolescents work with young children; and a program, developed at Harvard's School of Medicine, which teaches transcendental meditation as a coping mechanism (Brisolara 1977). An alcohol service program for adolescents in Salem, Ore., also addresses the need for alternative activities (Marion Polk Yamhill Council on Alcoholism n.d.).

Among the more recently initiated alcohol education programs are those that take a non-alcohol-specific, health education approach. These programs attempt to prevent alcohol problems indirectly by improving the personal adjustment of young people and by offering meaningful activities as alternatives to substance use.

Programs for Special Youth Populations

Various populations of youth are considered to be at risk for the development of problems related to alcohol by virtue of social, cultural, economic, family, or, perhaps, genetic factors. Alcohol education programs or program components have been developed specifically to meet the needs of such groups for preventive services.

Youth From Alcoholic Families. Children of alcoholic parents are a group known to be at risk for development of alcohol problems. Although most intervention with children of alcoholics tends to be therapeutic, due to the pathological dynamics of the alcoholic family, some programs have an educational focus. An educational and therapeutic program for 6- to 12-year-old children of alcoholics has been developed in a lower middle class community in Boston (Homonoff and Stephen 1979). Children are grouped by age (6 to 8 years and 9 to 11 years) and attend sessions led by a man and a woman. The sessions are structured around a specific activity and involve alcohol education, alcoholism education, and drama therapy. A program has also been developed recently to provide a series of educational sessions to young children of alcoholics and their mothers (Kern et al. 1977).

The Alcoholism Children Therapy (ACT) organization has recently published a workbook for use by children of alcoholics (Black 1979). The book was written by clinical social worker Claudia Black, whose work with children of alcoholics is nationally recognized. It includes blank pages for drawings and illustrations which can be colored to facilitate active participation by the children who use it.

Programs for adolescent children of alcoholics include a hospital-based educational and counseling program in Illinois for adolescents of alcoholic patients (McElfresh 1978). The program consists of four sessions which are provided concurrently with the alcoholic parent's treatment. The Wayzata, Minn., school system's chemical dependency

program offers peer support groups for students who themselves have problems with alcohol or other drugs or who come from families that abuse alcohol or other drugs (Brodie and Manning 1976). The CASPAR program also works with both adolescent and younger children of alcoholics (CASPAR 1980; DiCicco et al. 1977). Peer leaders run afterschool groups for adolescents, and school-aged children of alcoholics are served by inschool alcohol education groups (CASPAR 1980).

Disadvantaged Youth. Various programs have been designed to meet the needs of youth from disadvantaged ethnic minority groups. For these youth, discrimination, poverty, and cultural factors combine to increase the risk of developing alcohol-related problems. Groups that have received the most attention are blacks in poverty areas, Hispanic Americans, and American Indians. An example of a program for black youth is an experimental project implemented for sixth-grade children in a lower socioeconomic area in Philadelphia (Evans et al. 1979). The program was based on the premises that early intervention is necessary, that values clarification and promotion of self-esteem are the most promising approaches to prevention of alcohol problems, and that children learn best by doing. The method was a film-making project in which the students produced films on the subject "What Alcohol Means to Me."

Several programs for Hispanic American youth exist. A model project for urban poor Hispanic youth aged 12 to 17 years was operated for 3 years in East Harlem, N. Y. (Aguirre and Zambrana-Shojaei 1978). The program's goals were to effect positive changes in attitudes and behavior toward alcohol through alcohol information, values clarification, provision of alternative activities, and development of positive self-concepts. An ongoing program in the State of Washington offers alcohol education to Mexican-American elementary and junior high school students (Northwest Rural Opportunities n.d.). An information-oriented program based in Texas is geared toward the local Chicano population (Galveston County Community Action Council n.d.).

American Indian youth were another focus of NIAAA-funded prevention programs in the 1970s. A recently initiated program evaluates the effectiveness of two approaches to alcohol abuse prevention for Indian adolescents on two reservations in California (Institute for Scientific Analysis n.d.). One program uses a direct, didactic approach supplemented by instruction in traditional Indian ways by tribal elders. The second program uses an indirect, cultural approach which relies on the facilitation of participation by youth in traditional Indian religious healing ceremonies. The indirect approach is based on the hypothesis that increased adherence to Indian traditions will lead to a repudiation of the "white man's vice" of alcohol abuse.

Delinquents, Dropouts, and Troubled Youth. Several programs address themselves to the needs of adolescents who are out of the mainstream of youthful society for a variety of reasons. The Shalom program in Philadelphia includes summer services for potential school

dropouts as one of its components (Shalom 1979). The MAP Project in Pittsburgh has a small group component targeted at junior and senior high school students who are at risk due to school, personal, social, or family problems (University of Pittsburgh 1980). This component includes life skills groups which are taken for elective credits by junior high school students. These groups attempt to promote communication skills, self-assertion, self-esteem, self-control, and interpersonal skills. In addition, a drop-in center has been established to offer individual support to students who are experiencing problems in or out of school, and tutorial groups provide short-term tutoring to students with academic difficulties.

The Prevention Intervention (P/I) program, developed by the Sacramento, Calif., Office of Education and initiated in 1978, serves junior and senior high school youth "who recognize areas in their lives which need improvement" (Sacramento County Office of Education n.d. *b*). Twelve schools will be participating in this program by September 1980. Participating schools agree (a) to allow the P/I program director to assist in the selection of school staff who will teach the class, (b) to cooperate in evaluation, (c) to release staff for training, and (d) to operate at least one P/I course during the school year using recommended procedures. Class size ranges from 12 to 17 students, and four instructional components are included: decisionmaking, goal attainment, self-esteem, and self-responsibility. Staff training takes from 6 to 11 days, and followup meetings are provided.

Community-based programs targeted at high-risk youth include the Ebony Halfway House program in Phoenix, which offers alcohol awareness and prevention services for troubled children between the ages of 5 and 17 years (Ebony House n.d.). A program for adolescents who have had contact with the criminal justice system due to drug-related offenses has been developed in Toledo, Ohio (Iverson et al. 1978). The program consists of six group sessions that involve information, communication exercises, and role-playing and are designed to increase self-esteem, to improve parent-youth communication, and to reduce criminal behaviors. Concurrent sessions are held for parents.

Programs for special youth populations are targeted at children from alcoholic families, disadvantaged youth from various ethnic groups, dropouts, delinquents, and troubled youth. These groups often cannot be reached through school-based programs or programs using conventional methods. Due to the multiple problems often experienced by youth in special populations, these programs tend to utilize a non-alcohol-specific, health education approach.

Programs for Adults Who Interact with Youth

Youthful alcohol abuse may also be prevented by means of educational efforts directed at populations of adults who interact with

young people. Included in this category are programs for parents, families, teachers, and other members of the community.

Family and Parent Education Programs. The recently terminated nationwide Alcohol Education Project sponsored by the National Congress of Parents and Teachers was targeted at the family. Through disseminating the "Alcohol: A Family Affair" brochure and awarding grants to State PTA groups, this project aimed to promote family communication about alcohol, responsible use, and acceptance of abstinence (Kimmel 1976; National Congress of Parents and Teachers n.d. *a*). The brochure and other materials are still being disseminated. Similar goals characterize the "valuing families" component of the YMCA Youth Values Project, which provides training in communication for families at "family nights" in homes or other settings (Markell 1975). Games, exercises, and structured discussion are used to stimulate communication and decisionmaking. Operation Threshold, the national project conducted until recently by the U.S. Jaycees, also focused on the family unit in its promotion of responsible use of alcohol (Dolan 1976).

Programs directed specifically at parents include the Decisions and Drinking curriculum entitled "The Power of Positive Parenting," developed for parents of young children by the National Center for Alcohol Education (Richmond 1977). Each course consists of eight sessions, two of which are specifically tailored to the target group in question. Methods include discussion, role-playing, games, case studies, written exercises, and audiovisual presentations. Goals for parents are to examine how they influence their children and to determine what constitutes a responsible model for decisionmaking about drinking. Group participation and interaction are considered the essence of the course. A new curriculum guide for course facilitators has recently been published (National Center for Alcohol Education 1980).

A similar parent program implemented in Minneapolis focuses on the family's role in prevention and consists of five small group sessions (Minneapolis Health Department 1977). Programs developed at the State level by PTA groups as part of the nationwide Alcohol Education Project also offer parent training. These include Project Promise, a Nevada program designed to improve the parenting skills of parents of children with substance-abuse-related problems, and the Massachusetts project "How to Talk with Children About Drinking," a series of workshops for parents which concern alcohol information and basic communication skills (National Congress of Parents and Teachers n.d. *b*). Finally, a program based in Toledo, Ohio, offers group sessions to parents of adolescents who have had contact with the juvenile justice system due to drug-related offenses (Iverson et al. 1978). A major goal of the sessions, which are held concurrently with group sessions for the involved youths, is to improve parent-child communication.

Teacher and Community Education Programs. Various current programs offer training and consultation to teachers and other community professionals and lay people. The Alcohol and Drug Abuse

Education Program (ADAEP) of the U.S. Department of Education provides five regional training and technical assistance centers across the country (Spillane 1978). Trainee teams receive 10 to 14 days of training in counseling, communication, group process, and other topics at the centers; they then apply this training to community projects. Project staff may also receive up to 2 years of technical assistance and onsite training in the local community. Trainees include educational personnel, students, civic leaders, and mental health professionals. ADAEP also operates six demonstration projects that train teachers-to-be through short-term workshops and programs at colleges of teacher education.

Another nationwide program that provides information and guidance for community members interested in youth prevention is one sponsored by the American Legion's Children and Youth Division ("American Legion Promotes" 1978). American Legion headquarters in Indianapolis is developing model program packages to be distributed at regional conferences. Local Legion prevention activities include an alcohol awareness campaign in San Bernardino, Calif., conducted in cooperation with the PTA, and a drinking-driving program in Idaho aimed at youth.

A national communications program for alcohol education is Operation Cork, funded by the Kroc Foundation (Operation Cork 1979). The project has produced two films concerning the effects of alcoholism on children and families which have been broadcast nationally by NBC and PBS and have been shown to school administrators, mental health workers, students, and others. In addition, it has formed a consortium of six medical schools to develop alcoholism curriculums. A third major thrust of Operation Cork is a program begun at Michigan State University's College of Education in 1978 to develop an integrated alcohol curriculum and provide teacher training.

The National Center for Alcohol Education has designed training materials for use by persons responsible for planning and implementing prevention programs for youth (National Center for Alcohol Education 1978). The materials include a detailed guide to four training sessions, a film, alcohol information, and lists of additional resources.

Local programs of teacher and community education include a joint effort by the Spokane Junior League and Whitworth College in Spokane, Wash., which seeks to provide "a broad base of education for the entire community" (Savage 1978, p. 349). The program utilizes the Here's Looking at You materials and concepts. Community volunteers and teachers of grades K-12 receive training in value and attitude clarification; teaching methods with a responsible decisionmaking orientation; and topics such as the cultural context of alcohol use, drinking as a learned behavior, and sources of information about alcohol. A graduate program in community health education with a specialty in alcohol studies has been developed by the Department of Health Education at New York University (Hamburg 1977). The

curriculum is designed to train community alcohol educators and includes an internship in a school, youth agency, or related setting.

Three statewide PTA programs which are part of the national PTA Alcohol Education Project offer training for members of the community (National Congress of Parents and Teachers n.d. *b*). California's People to People program has created an instruction manual for the development of group leadership and project initiation skills that can be used in the implementation of school- and community-based alcohol education programs. The Missouri PTA has developed "The Community Action Plan," a manual for a 3-day training program for alcohol and mental health professionals who want to start community-based alcohol education projects. Finally, the Utah PTA has prepared guidelines for PTA leaders to use in planning and implementing community alcohol education programs.

Two additional community-based programs of adult education have somewhat different goals and target groups. A short-term program sponsored by the Eagleville Hospital and Rehabilitation Center in Eagleville, Pa., attempts to help youth and adults understand alcoholism (Schneider 1976). The program consists of four sessions presented to church congregations; these sessions take the participants through a set of experiences designed to help them become more informed and sensitive about alcohol and alcoholism. The Partners Inc. program in Denver, Colo., provides educational workshops for adult volunteer counselors who work with predelinquent youth (Partners Inc. n.d.). The workshops' goals are to give youth workers information about alcohol and to instill in them the ideas of responsible alcohol use and the necessity of viewing adolescent alcohol problems in a social and familial context.

Programs for adults who interact with youth are numerous and have a wide range of target groups, including teachers-in-training, parents, and adults interested in providing alcohol education and prevention programs for youth in their communities. These programs help adults explore their feelings, attitudes, beliefs, and behavior toward alcohol and equip them to act as educators and role models for youth.

Effectiveness of Alcohol Education Programs

Based on the limited evaluation data available in the current alcohol education literature, the effectiveness of alcohol education in affecting knowledge, attitudes, and behavior is reviewed below.

Knowledge Change

Several programs have found significant increases in knowledge about alcohol among participants. Some programs have found significant increases in knowledge on the basis of simple pretesting and posttesting (Fullerton 1979; Simon and Moyer 1976). Other programs,

which utilized pretesting and posttesting and a control group or groups in their evaluation designs, also found significant effects on knowledge levels (DiCicco 1978; Hoyt 1976; National Institute on Alcohol Abuse and Alcoholism n.d.; Rose and Duer 1978; Sadler and Dillard 1978; Staulcup et al. 1979; Weisheit et al. 1979).

CASPAR participants who received proper implementation of the program showed significant reductions in incorrect responses to factual questions, regardless of their pretest knowledge level (DiCicco 1978; Staulcup et al. 1979). Junior high students, who received more exposure to the curriculum than senior high students, showed the greatest gains in knowledge (National Institute on Alcohol Abuse and Alcoholism n.d.). Teachers, especially women and those who had taught the alcohol curriculum, also showed significant increases in knowledge.

Students at all grade levels who were exposed to the Here's Looking at You program scored significantly higher on knowledge tests than students not exposed to it (National Institute on Alcohol Abuse and Alcoholism n.d.; Weisheit et al. 1979). Evaluation of Here's Looking at You teacher-training workshops indicated that the workshops increased teachers' knowledge about alcohol, alcoholism, treatment resources, and the curriculum (National Institute on Alcohol Abuse and Alcoholism n.d.; Rankin et al. 1978).

A few programs reported no change in knowledge levels of program participants. The University of Florida Alcohol Education Project, which tested the effects of three different curriculums on elementary, middle, and high school students, found that students gained very little knowledge compared with controls, regardless of which curriculum they were exposed to (Staulcup et al. 1979). A program for a special population—adolescents who had had contact with the criminal justice system—found no change in knowledge, based on pretesting and posttesting (Iverson et al. 1978). However, the adolescents' parents, who underwent a similar program, did show significant gains in knowledge.

Attitude Change

Attitudes evaluated in alcohol education programs may include attitudes toward alcohol or attitudes toward self and others which programs attempt to influence in order to have an indirect effect on alcohol use. With regard to attitudes toward alcohol, various programs have reported positive effects. To date, evaluations of CASPAR indicate a significant decrease in stereotypical attitudes among students exposed to proper program implementation and an increase in positive attitudes toward teenagers' responsible decisions about alcohol among teachers (DiCicco 1978; Staulcup et al. 1979). Greater effects on attitudes were found among younger students and those with fewer prior exposures to alcohol education (National Institute on Alcohol Abuse and Alcoholism n.d.; Staulcup et al. 1979). Some regression in

attitudes was found among teachers in a followup posttest, but it was less for teachers who had taught the curriculum or who had had more exposure to it (DiCicco 1978).

Using a pretest-posttest control group design, three other programs found favorable effects on attitudes toward alcohol use (Hoyt 1976; Rose and Duer 1978; Staulcup et al. 1979). One of these, the Here's Looking at You program, found this effect among sixth graders and senior high school students, but not at other grade levels (National Institute on Alcohol Abuse and Alcoholism n.d.; Weisheit et al. 1979). High school students scored significantly better on all attitude dimensions tested (Weisheit et al. 1979). Another program found an effect among eighth graders but not among sixth or seventh graders (Rose and Duer 1978). In addition, the Boys' Clubs of America program, which used a pretest-posttest design with no control group, found positive changes in attitudes toward alcohol (Staulcup et al. 1979). However, attitudes were measured by asking the students to report whether or not their attitudes had changed as a result of the program, rather than by direct attitude questions.

Several programs found no effects on attitudes toward alcohol. Two general population programs resulted in no attitude change (Fullerton 1979; Simon and Moyer 1976). In one of these projects, both before and after instruction, students felt that alcohol and drugs had a high abuse potential (Simon and Moyer 1976). Two programs for at-risk populations also found no significant effects on attitudes (Evans et al. 1979; Iverson et al. 1978). In one of these programs, experimental subjects almost reversed their values about exploring attitudes: after the program they tended to endorse the idea that they were too young to explore alcohol-related issues (Evans et al. 1979).

Some programs reported favorable changes in non-alcohol-related attitudes. A program in which high school students produced slide-tape presentations on responsible decisionmaking about alcohol reported greater idealism and an enhanced sense of social justice among participating students (Calmes and Alexander 1977). Three programs that compared program participants with control groups also found positive changes in non-alcohol-related attitudes. The Here's Looking at You program resulted in improved self-concepts among fourth graders (Staulcup et al. 1979; Weisheit et al. 1979). Second, a non-alcohol-specific program for elementary school students found significant increases in feelings of self-worth (Hoyt 1976). Finally, the Prevention Intervention program for troubled youth found significant gains in positive self-concept and in perception of personal responsibility among P/I class participants compared with nonparticipants (National Institute on Alcohol Abuse and Alcoholism n.d.).

Behavior Change

Few programs include evaluation of effects of the intervention on actual drinking behavior. Three programs that have obtained statistical

measures of alcohol use to date have found some positive effects. On the basis of pretesting and posttesting, an evaluation of the Boys' Clubs of America program found that beer consumption increased, while consumption of other alcoholic beverages decreased (Staulcup et al. 1979). Also, participants reported less yielding to peer pressure and a lower incidence of alcohol-related problems. Finally, a majority of participants reported that their drinking habits had changed.

A second program, conducted among sixth graders in California, compared the impact of five modes of education; it determined that students who initially used alcohol infrequently showed the least change in use (i.e., they remained low-frequency alcohol users and did not begin using new and more extreme drugs) when they received informational education (Blum et al. 1978). Students who initially used alcohol frequently showed less change in use under the control condition and less expansion to other drugs under the combined didactic and affective education condition than those under other conditions. The authors concluded that the didactic approach is better for use by regular teachers with students at low-use levels, while the combined approach applied by trained teachers can reduce use at higher levels.

The third program to find positive behavioral effects is CASPAR. Evaluation of the CASPAR program indicated that self-reported problem drinking among junior and senior high school males declined over a 3-year period, even when adjustments were made for maturation (National Institute on Alcohol Abuse and Alcoholism n.d.).

Two programs reported nonstatistical findings concerning alcohol-related behaviors. The CASPAR program utilizes a "critical incident" method of determining individual change, by which teachers record observations and interactions with selected students over time. Of 682 students observed to date, one-sixth showed positive changes in areas such as awareness of the role of alcohol in their lives and seeking help for alcohol-related problems (DiCicco 1978). Second, the Prevention Intervention program for troubled adolescents found that at the end of the school year, more program participants than nonparticipants reported using less alcohol than they had used in the middle of the school year. However, other findings and problems such as small sample size and incomplete comparability of the two groups make the evaluation of this program inconclusive to date (Sacramento County Office of Education n.d. *a*, *b*).

A few alcohol education programs have found positive changes in non-alcohol-related behaviors. These changes include increased helping behavior (Calmes and Alexander 1977); reduced behavior problems, increased class participation, greater verbal expression of feelings, and greater extroversion (Hoyt 1976); and in the Here's Looking at You program, increased decisionmaking skills among fifth graders and junior high students (National Institute on Alcohol Abuse and Alcoholism n.d.; Weisheit et al. 1979). Finally, no changes in non-alcohol-related target behaviors were reported by at-risk programs for black children of

problem drinkers (Staulcup et al. 1979) and adolescents who had had contact with the juvenile justice system (Iverson et al. 1978) and a general youth population program based on "rational self-counseling" (Fullerton 1979).

Evaluations of the effectiveness of alcohol education programs have found limited effects on knowledge, attitudes, and behavior. Effects on knowledge and attitudes appear to be easier to achieve, although few programs reported either positive or negative results concerning behavior toward alcohol. Programs for special youth populations seem to have had more negative or equivocal effects than general population programs. This may be due to the multiple problems characterizing such populations, the multiple objectives of the programs, or difficulties in applying rigorous research designs to programs with mental health goals and target groups with special cultural and other characteristics.

Of the effects reported, some are suspect because the studies were based on a simple comparison of participants before and after the programs, rather than on a controlled, multigroup design. Thus, it is not certain whether the effects reported were due to the program or to other factors. As evaluation techniques are further developed and refined, knowledge of how to evaluate programs will increase, and the use of more sophisticated techniques may become the norm rather than the exception among alcohol education programs of all kinds.

It is encouraging that several general population programs which used more sophisticated evaluation designs, such as CASPAR and Here's Looking at You, reported positive effects on knowledge and attitudes. Further, it must be kept in mind that many current alcohol education programs have not yet been completely evaluated, and that longitudinal data from programs with good evaluation designs are still forthcoming. For example, the Here's Looking at You program collected baseline data pertaining to drinking behavior and other factors during 1978-79 and is currently collecting more data as part of a 3-year longitudinal evaluation (Weisheit et al. 1979). Results of this and other ongoing evaluations will provide significant knowledge about prevention through alcohol education. Currently, evaluation results constitute only a small part of the published literature on alcohol education.

Two of the more comprehensive and successful programs to date, CASPAR and Here's Looking at You, are currently being replicated in five States through NIAAA-funded programs (Hubbard 1978). In addition, the Here's Looking at You program is being implemented in various States, such as Alaska, on the States' own initiative. The eventual results of these replications, added to those from the original programs, should add to our knowledge of what constitutes effective alcohol education for youth. Continued replication of programs or program components that prove effective is also necessary.

Current Status of Alcohol Education

In summary, the majority of current alcohol education programs are targeted at general populations of youth in school settings. Most programs focus on children in grades 6 through 12, although some serve younger children. A relatively small number of programs for general youth populations take place in the community. General population programs can be categorized as (1) informational and alcohol-specific, (2) non-alcohol-specific and oriented toward personal development and health education, or (3) both cognitive and affective. Combined programs are the most numerous, while those which focus on alcohol information are currently the least prevalent.

Methods that characterize the combined cognitive and affective programs include clarification of values, decisionmaking, training of youth to serve as peer leaders and instructors, and teacher training. The latter two methods are designed to result eventually in self-perpetuation of programs, as well as to achieve short-term program goals. Values clarification and decisionmaking are used to help youths explore their feelings, attitudes, and values with regard to alcohol. The combined programs are based on the philosophy that attitudes and feelings are at least as important in determining drinking behavior as knowledge levels. Their general goal is to facilitate responsible use or nonuse of alcohol.

Informational programs focus on providing facts about alcohol and tend to be shorter than other programs. In contrast, programs that take a health education approach may include little or no alcohol-specific information or discussion. They are based on the assumption that children who have reached an optimum level of personal adjustment are less likely to use alcohol or to develop alcohol problems. Thus, their objective is to facilitate personal development.

Current alcohol education programs are also targeted at special populations of youth considered to be at risk for the development of alcohol problems; their goal is to minimize this risk. Groups most often served by such programs are children of alcoholics; disadvantaged black, Hispanic American, and American Indian youths; and dropouts, delinquents, and other troubled youths. Programs for the first two groups tend to focus on younger children. Programs for special youth populations tend toward a health education approach, and many are community based.

A final category of programs includes those targeted at adults who interact with youth. These programs tend to be based in the community or to have as a goal the training of adults to implement community programs. They serve families, parents, teachers, and other members of the community. Their goal is to influence youth indirectly through education of adult leaders, teachers, and role models.

Some evidence of the effectiveness of alcohol education in changing knowledge, attitudes, and, to a lesser extent, behavior has been found. However, conclusions concerning what constitutes an effective alcohol

education program for a particular target group await further evaluation results, as well as the refinement and more widespread use of effective evaluation methods.

Future Trends and Needs in Alcohol Education

Various trends and needs in alcohol education for youth can be discerned in the current alcohol education literature. Two broad categories of recommendations for future directions of alcohol education—those related to programs and those related to evaluation of program effectiveness—are discussed below.

Program Trends and Needs

Target Groups. Recommendations for alcohol education programs specifically tailored to the needs of at-risk youth populations continue to be made. Groups considered most in need are children of alcoholics (Chafetz 1979; Kern et al. 1977; Maloney 1976; National Nurses Society on Alcoholism 1978), dropouts and potential dropouts (Burkett and White 1976; Maloney 1976), delinquent and predelinquent youths (Braxton 1978), and minority youths (National Nurses Society on Alcoholism 1978). Other target populations that have recently received attention include siblings of alcohol or drug abusers (Coleman 1978), exceptional children (Floyd and Lotsof 1977), and students in private schools (Robles et al. 1979).

Parental involvement in youth education programs or education specifically for parents is another suggested new direction for prevention (Bocage and Waters 1976; Brisolara 1977; Hames 1977; Norem-Hebeisen and Lucas 1977; Shain et al. 1977; Vissing 1978). Comprehensive teacher training is also frequently mentioned as a prerequisite for effective alcohol education (Milgram 1976*a*, *b*; Shain et al. 1977; Stickgold and Brovar 1978; Vissing 1978). Inclusion of substance abuse curriculums in schools of education has been recommended and is increasingly being done (Hochhauser 1978). Training of volunteers and paraprofessionals is also suggested to help expand the pool of adults involved in youth education programs (National Nurses Society on Alcoholism 1978; Teicher et al. 1976).

Methods. One important new direction in program methods is to gear methods more rigorously to the developmental level of the youths involved (Bocage and Waters 1976; Chunko 1976; Cowley 1977; Doucet et al. 1978; Lee 1976; Mannello 1978; Milgram 1976*a*, *b*; Norem-Hebeisen and Lucas 1977; Owen 1977; Simmonds 1978). The introduction of alcohol education topics should also be timed to take advantage of the concerns of different developmental stages (Burkett and White 1976). Many feel that alcohol education can be effective beginning in the early school years; the Here's Looking at You program provides an example of successful K-3 programing (Hochhauser 1978;

Korn 1978; Lee 1976). Effectiveness may also be increased by long-term education, throughout childhood and adolescence (Chunko 1976; Kleisinger 1978).

Another recommended approach is to tailor alcohol education methods to the characteristics of target populations. This requires sensitivity to cultural factors (Chunko 1976; Guinn 1978; Institute for Scientific Analysis n.d.). Programs must also be designed according to the use habits of the target population (Blum et al. 1978; Dembo and Miran 1976; Dembo et al. 1977; Stickgold and Brovar 1978). The use of a wide variety of techniques has been advocated in order to reach the widest segments of target populations (Iverson 1978).

A comprehensive approach to alcohol education, utilizing community- and school-based programs and focusing on both environmental and individual change, is also a frequently mentioned need and future trend (Hames 1977; Maloney 1976; Mannello 1978; Stickgold and Brovar 1978; Wepner 1979). The community approach is a means of reaching high-risk youth who are less likely to be influenced in a school setting or by conventional methods (Burkett and White 1976; Dembo and Miran 1976). School-community cooperation has also been advocated to enrich alcohol education efforts and utilize all available resources (Simmonds 1978; Stickgold and Brovar 1978; Vissing 1978). The CASPAR program provides one example of the importance of such cooperation.

Programs must also use methods that address the importance of peer influence. This can be achieved by including young people as program planners and implementers (Akers et al. 1978; Bocage and Waters 1976; Maloney 1976; National Institute on Alcohol Abuse and Alcoholism 1978; Wepner 1979).

Although most current programs in school settings are presented in isolation from the rest of the curriculum, another future trend is interdisciplinary treatment of alcohol-related topics throughout the entire curriculum (Cappiello 1977; Cowley 1977; Finn 1979; Norem-Hebeisen and Lucas 1977; Simon 1976; Stickgold and Brovar 1978). Educational arguments have been presented for the interdisciplinary approach, as well as for the separation of alcohol education from education about illegal drugs (Finn 1977*b*, 1979).

The non-alcohol-specific approach to the prevention of alcohol abuse seems to be gaining favor. This approach is recommended on the grounds that personal development is an intermediary goal which will lead to responsible alcohol use or nonuse without need for specific consideration of drinking (Cappiello 1977; Mannello 1978; Norem-Hebeisen and Lucas 1977; Owen 1976; Simon 1976; Vissing 1978).

A positive approach to alcohol education, in which youths are taught what to do rather than what not to do with regard to alcohol, is also becoming increasingly popular (Hames 1977; Iverson 1978; Kleisinger 1978; Kolbe 1978; Lee 1976; Mannello 1978; Vissing 1978). It has been pointed out that in order to maintain credibility and present a balanced picture of alcohol's role in society, the positive effects of responsible

alcohol use must be included in any alcohol education program (Finn 1977*a*; Iverson 1978). Adherents of the positive approach often emphasize the role of social learning in alcohol use (Akers et al. 1978; Bocage and Waters 1976; Simmonds 1978; Weissbach and Vogler 1977). They argue that alcohol use can be placed in a context of social control in which group norms condemn irresponsible use and offer guidelines for responsible use (Kolbe 1978).

A number of specific, innovative methods suggested in the recent literature also represent potential program directions. These include use of youth-oriented media and personalities (Maloney 1976; National Institute on Alcohol Abuse and Alcoholism 1978; Wepner 1979), live theater (Hewitt et al. 1978), film (Calmes and Alexander 1977; Evans et al. 1979), art (Kunkle-Miller and Blane 1977), computers (Cook 1978), radio interviews (Pressley 1978), and role-play exercises concerning alcoholism and alcoholics (Finn 1978*b*). Innovative (and controversial) suggestions for teaching youth the positive aspects of responsible use include observations of and interviews with moderate drinkers, cooking with alcohol, wine tasting (Finn 1977*a*), supervised drinking experiences (Bocage and Waters 1976; Hames 1977; Weissbach and Vogler 1977), and the establishment of family-oriented settings for drinking which treat drinking as an adjunct to other activities (Bocage and Waters 1976).

Evaluation Trends and Needs

The lack of sophisticated evaluation in many projects and the lack of evidence of program effectiveness have led to general recommendations for a more rigorous and comprehensive approach to evaluation (Bacon 1978; Schlegel 1977; Staulcup et al. 1979). A need for integration of research and program aspects has been pointed out (Dembo 1979). Definitional issues must also be resolved before appropriate objectives can be chosen and measured (Bacon 1976).

Specific recommendations include the development of standardized, reliable, and valid measures of knowledge, attitudes, and behavior (Doucet et al. 1978; Staulcup et al. 1979); a centralized, national data-gathering system (Bacon 1978); use of multigroup designs with control groups and analysis of pre-post differences by subcategories such as sex and age (Sawyer 1978); and more limited objectives (Cowley 1977; Swanson 1978). Longitudinal designs, delayed posttests, and extended external funding, which would aid in determining effects over longer periods of time, are also advocated (Doucet et al. 1978; Staulcup et al. 1979). The use of confidential, unique I.D. codes for survey instruments, such as those developed for the CASPAR program, could greatly aid longitudinal evaluation (Carifio and Biron 1978; Schlegel 1977; University of Pittsburgh 1980).

Some persons contend that conventional research methods are inappropriate for preventive programs in general and for programs designed for minority groups and other special youth populations in particular (Aguirre and Zambrana-Shojaei 1978). They argue for a

different approach to evaluation rather than for attempts to apply rigorous experimental criteria to programs which have difficulty meeting them. Suggested approaches include development of new, less rigorous statistical techniques (Swanson 1978), greater use of qualitative evaluation methods (Aguirre and Zambrana-Shojaei 1978), a focus on individual as well as on group outcomes (Biron et al. 1980), and action research that allows facilitation of change simultaneously with research (Shain et al. 1977).

A final group of suggestions concerns areas that have been neglected in the research on alcohol education. One area is evaluation of the programs themselves (Finn 1978*a*). This may be done by means of consumer evaluations (Homonoff and Stephen 1979; Lee 1976; Sadler and Dillard 1978; Simon and Moyer 1976; University of Pittsburgh 1980) or evaluations by teachers (Faucette and Jacobson 1977; Fullerton 1979; Hoyt 1976). An instrument for evaluating programs has recently been developed for use with teachers, parents, or students (Finn 1978*a*). Another neglected area is the use of diagnostic measures to aid in needs assessment, program planning, teacher training, and evaluation of teachers prior to their involvement in programs (Finn 1978*a*; Kleisinger 1978; Simmonds 1978).

This review of current alcohol education programs indicates that considerable progress has been made in providing programs that address cognitive, affective, and behavioral aspects of alcohol use for a variety of youthful populations. The future trends and needs in program methods and target groups and evaluation goals and methods reflect the fact that alcohol education for youth is still a relatively young field, but one that has great potential for increased sophistication and effectiveness.

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Chapter 9

Alcohol Use and Alcohol Problems Among The Elderly

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Abstract

The study of older adults is relatively new for the social sciences, and there are problems of definition as to what is meant by "elderly." There is strong evidence, consistent over time and consistent from country to country, that at age 50 and older the percentage of drinkers declines. To define the term "abstainer" is simple but is a "moderate" drinking 25-year-old drinking the same quantity/frequency as a "moderate" drinking 65-year-old?

There is evidence that the 50-and-older age period is a time when many shifts of drinking behavior occurs. A sizable portion of persons aged 50 and older become abstinent. The percentage of heavy drinkers drops. At age 60 to 65, the percentage of heavy drinkers among males drops even more sharply. And there is support for a change in the opposite direction, i.e., a certain number of older persons who have been abstainers or moderate social drinkers become problem drinkers. The older adult phase of the life cycle thus appears to be a period when drinking decisions are being made again. It merits research exploration.

Insofar as problematic drinking and alcoholism go, there is general agreement in the limited literature that between 2 and 10 percent of older social drinkers present alcohol-related problems of different kinds. This figure will vary, depending on the population studied, but clearly hospital ward studies show much higher percentages; since alcoholics occupy a disproportionate number of hospital beds in the United States and since that is also true of older persons, it is hardly surprising to find figures ranging from 15 to 49 percent as estimates of the proportion of admissions who are older and who have alcohol problems.

Three groups of elderly problem drinkers may be distinguished: first, there are aging, long-term alcoholics who have had a relatively early onset and a long duration of alcoholic behaviors; since they outlive the statistical probabilities, they may be called survivors. Second, there appears to be a group of elderly problem drinkers whose problem is of recent onset and short duration; they may be termed reactive alcoholics, since there is no evidence of alcoholism earlier in life and since they seem to be responding to the losses and stresses of aging. And third, there may be a group of elderly problem drinkers who have been intermittent problem drinkers, i.e., a

group who have had earlier, occasional episodes of heavy or problematic drinking and have alternated such episodes with periods of sobriety.
A comparison of middle-aged and older alcoholic men show the following differences: middle-aged men report more symptomatic behavior and psychological dependence on alcohol, more belligerence associated with drinking, and more alcohol-related job problems. Older men more often report binge drinking, problems with spouse and relatives, problems with friends and neighbors, financial problems, legal problems, health problems, and accidents.
Some of the issues related to effective outreach and intervention are the issue of confrontation, the appropriateness of referral to an alcoholism or a substance abuse agency, the issue of medication, the apparent effectiveness of the "social therapies," the attitudes of alcoholism agency personnel toward the older problem drinker, and the goals of treatment. Primary prevention can be directed toward the reactive problem drinker in self-help organizations of older persons and in preretirement training. The need for more information about the drinking patterns and the drinking problems of older persons is great; the proportion of the population 60 and older grows larger each year.

Introduction

The word "elderly" is a relative term. To an adolescent, parents in their late thirties or early forties may seem old. It is a folk wisdom that our concept of "old" changes as we each advance in age.

Defining who is meant by "the elderly" is a crucial, and as yet unresolved, problem for biomedical and social researchers. The elderly might be defined legally in terms of retirement age or Social Security benefits. Neugarten (1976) distinguished between the "young old" (aged 55-75) and the "old old." In several studies of "older" populations, social scientists defined elderly or older as 55 and over, reasoning that people who are 55 are close to their sixties and their behaviors could be extrapolated (Rathbone-McCuan et al. 1976; Schuckit et al. 1978). Age 50 was the cut-off point for studies on the lifestyles and drinking practices of older Americans (Carruth 1974) and hospitalized patients (McCusker et al. 1971).

Obviously, such variable definitions create problems in reviewing the literature on alcohol use and abuse in the elderly. Drinking behavior and its relationship to health, physical condition, hospitalization, medication, isolation and loneliness, retirement, arrests, and loss of spouse are *not* the same for most people at ages 50, 65, and 75. The "graying of

America" is resulting in more and more studies and programs directed toward this rapidly growing segment of the population. Thus, it is essential for researchers to reach a consensus on the terms older and elderly.

Given the problems of definition inherent in the literature, this paper presents a comprehensive overview of what is known about alcohol use and abuse in older persons. The first section discusses social drinking patterns of older people. The next section provides information on the incidence and prevalence of problem drinking in the elderly and discusses the psychosocial variables, antecedent conditions, and symptoms associated with their problem drinking. The third section reviews what is known about, and what is needed in the way of, outreach, casefinding, and treatment. The fourth section talks briefly about prevention activities. The final section lists research priorities that are vital to the development and implementation of appropriate prevention and treatment programs for this population.

Social Drinking

In a classical national survey (Cahalan et al. 1969) and in a recent national survey of American drinking practices (Clark and Midanik in press), drinking behavior was described in terms of abstainers, moderate drinkers, and heavy drinkers. Social drinking norms vary considerably in different communities, regions of the country, and age groups. Younger people tend to drink larger quantities on fewer occasions than older people; older people drink lesser quantities on more frequent occasions. Infrequent, moderate, and heavy are compromise terms applied to a national sample which includes a wide range of age groups; a "moderate" drinker at age 25 is not drinking the same amount with the same frequency as a "moderate" drinker at age 65. Not only is there a drop in the proportion of older persons who engage in social drinking but also a drop in the quantity older persons drink.

Table 1 reports data from the 1979 National Survey and indicates some of the changes in drinking that occur with age. The quantity/frequency/variability measure was used to classify respondents. There is a decrease in the percentage of drinkers among people 50 and over. To put it another way, the percentage of abstainers among men rises from approximately 21 percent in the age group 21 to 50, to 37

percent of men 51 and older; the percentage of abstainers among women rises from 39 percent to 57 percent. What are the possible explanations for the decrease in social drinking among older persons?

- *economics*: Older persons have less money (Duncan and Morgan 1979). Since a smaller proportion of poorer people (48 percent) drink compared with average (70 percent) and prosperous (80 percent) groups (Keller and Gurioli 1976), it follows that the decrease in drinking may be a function of lower income.

- *physiology*: Older persons have higher blood alcohol concentration peaks than younger people given similar amounts of alcohol (Vestal et al. 1977). This may relate to lowered alcohol intake in older persons.

- *effects of alcohol*: Perhaps dizziness, slurred speech, and hangovers are too high a price for the older person to pay for drinking.

- *life cycle differences*: Perhaps each successive cohort of older persons drops in percentage of drinkers as did the same age cohort a generation earlier, two generations earlier, etc. (Marden 1976).

- *unique historical aspects*: The current population of older persons experienced historical events such as Prohibition and the Great Depression during their developmental years. These experiences may have produced drinking habits that have been consistently lower than those of the generations which followed.

- *medical problems*: Older persons are more likely to have medical problems and are therefore less likely to drink on that account.

Table 1 also shows a significant drop in the proportion of heavy drinkers among women over 50 and among men over 60 years of age. This drop remains constant for women although the percentage of heavy drinkers among males who survive into their seventies and beyond shows an elevation, a finding which confirms earlier evidence of such a rise among older men (Bailey et al. 1965).

Why does heavy drinking drop off so dramatically for women and for men at these ages? Alcoholism is, due to death and spontaneous

Table 1. Drinking by Age and Sex: Quantity, Frequency, and Variability

Age by Sex	*N*	Percent Abstainers	Percent Moderate 1–60/Month	Percent Heavy 60+/Month	Percent of all Drinkers Who Are Heavy Drinkers
Men					
18–20	(37)	5	79	17	18
21–25	(82)	10	54	36	40
26–30	(87)	20	50	29	36
31–40	(154)	25	55	19	25
41–50	(107)	27	52	21	29
51–60	(130)	32	51	17	25
61–70	(91)	38	53	8	13
70+	(72)	41	45	13	22
Total	(762)	25	54	21	28

Table 1. Drinking by Age and Sex: Quantity, Frequency, and Variability

Age by Sex	*N*	Percent Abstainers	Percent Moderate 1–60/Month	Percent Heavy 60+/Month	Percent of all Drinkers Who Are Heavy Drinkers
Women					
18–20	(52)	31	64	5	7
21–25	(130)	15	78	6	7
26–30	(125)	30	65	5	7
31–40	(208)	27	65	9	12
41–50	(137)	43	46	10	18
51–60	(143)	50	46	4	8
61–70	(102)	61	38	1	3
70+	(103)	61	39	0	0
Total	(1,010)	40	54	5	8
Sample Total		(1,772)	33	54	13

SOURCE:Clark and Midanik, in press.

recovery, a "self-limiting disease" (Drew 1968). It is well known that heavy drinkers have lower life expectancies (Schmidt and deLint 1969). Some other hypotheses should be considered. Retirement from work at ages 60-65 may result in *reduced* drinking for some men because job-related pressures to drink (e.g., business lunches, job stresses, or peer pressure to drink after coming off a shift) are eliminated.

Among women, the proportion of heavy drinkers is highest between the ages of 41-50. This may be "middle-aged depression" (Bart 1975). Why then the drop in percentage of heavy drinkers around age 50? This could be related to physiological and hormonal changes. It could be related to changes in women's sex role behavior or to women's greater acceptance of and expression of assertive behavior (Neugarten and Gutmann 1968).

It would appear that the drop, with aging, in the percentage of people who drink is a universal phenomenon. For those countries where age/drinking data are available, the same drop in percentage for the 50-and-over group appears. Thus, in Ontario, Canada, over 86 percent of those aged 21 to 49 drink, while 67 percent of those 50 and over drink, and in Norway, these figures are 78 percent and 58 percent (Keller and Gurioli 1976).

The evidence indicates that the age 50-and-over period of the lifespan is a time when many shifts of drinking behavior occur. Researchers need to focus on this later age period when a number of interesting changes take place: a sizable portion of persons aged 50 and over become abstinent and the percentage of heavy drinking drops. The percentage of heavy drinkers among men drops even more sharply after age 60. A certain number of older persons who may have been social drinkers or abstainers become problem drinkers (which may explain the reversal in the decreasing trend for men at age 70+).

Problem Drinking

How do we define "problem drinking" or "alcoholism" in older persons? The chemically dependent, physically debilitated, aging chronic alcoholic who has been behaving alcoholically for decades, persistently or intermittently, is not a diagnostic puzzle. What about the so-called recent-onset problem drinker whose adult children are concerned about his or her drinking? If we are to define "problem drinker" pragmatically, an older person is a problem drinker if his or her drinking creates difficulties in the family. The same would be true if a worried friend reported someone's difficulties with drinking. Many older problem drinkers are "hidden" or overlooked because their behavior is not socially disruptive. For the present, a *pragmatic* definition of an older person's problem drinking seems best: the problems that result in drinking may be related to family crises; conflict with spouse, adult

children, or other people in the social networks; health; accidents; arrests; and so on.

Kinds of Data Available

There is a dearth of information not only about the incidence and prevalence of alcohol problems among older persons but also about the populations of older persons at risk. The accumulated literature offers some limited information about those persons who find their way into hospital wards or other treatment facilities but very little information about the size of the problem or the places to look. The literature includes the following:

- National surveys that gather information about drinking include information about the percentage of older persons who are abstainers, moderate drinkers, heavy drinkers, etc. (Cahalan et al. 1969; Harris and Associates 1971; Keller and Gurioli 1976).

- Surveys of a single State, city, or community that include a wide age range of all adults (Bailey et al. 1965; Knupfer and Room 1964; Michigan Office of Services to the Aging 1978; Siassi et al. 1973).

- Surveys of a single city or community directed specifically toward its older population (Guttman 1977; Johnson and Goodrich 1974). One variant of this type of survey is a one-city survey that compares samples of older persons living in the community, in living arrangements and housing specifically for the elderly, and in domiciliary settings and nursing homes (Rathbone-McCuan et al. 1976).

- Inquiries among professional personnel in agencies and treatment facilities in a community to estimate the proportion of elderly persons with alcohol problems seen by those agencies (Carruth et al. 1973; Gordon et al. 1976; Welsh 1976).

- Studies in hospitals that most frequently report data from a general or psychiatric hospital ward. Occasionally, this kind of report comes from an inpatient nursing home for older people. The question usually posed is, What proportion of the patients have had or now have alcohol problems? The problem here is the selectiveness of a hospitalized sample with medical and psychiatric problems. Approximately 20-25 percent of hospital beds in the United States are occupied by people with medical problems very likely to be alcohol related; estimates of alcoholism prevalence

among male patients of general hospitals range from 25 percent and 30 percent (Reading 1974; Straus 1973) to considerably higher percentages (Abbott et al. 1974; Gomberg 1975). Therefore, percentages of alcohol problems derived from hospital studies must be interpreted with caution because their generalizability to the whole community of older persons is limited (Baer et al. 1970; Black et al. 1980; Daniel 1972; Epstein and Simon 1967; Gaitz and Baer 1971; Glatt and Rosin 1964; Goldstein and Grant 1974; Gomberg 1977*a*; McCusker et al. 1971; Rosin and Glatt 1971; Schuckit and Miller 1976; Simon et al. 1968, 1970; Whittier and Korenyi 1961; Zimberg 1971).

- Reports involving residents of housing designed for older persons, including hotels and homes (Harrington and Price 1962; Kantor et al. 1974; Plutchik et al. 1975; Saunders 1976; Twigg 1959). Reports may include the description of a program, the study of the size of the problem, or the effect of a given program on the residents.
- Reports on the psychological and sociological characteristics of older problem drinkers in both hospitals and outpatient clinics. For an older person to be labeled a problem drinker or an alcoholic, he or she must either report being one in response to a survey or be diagnosed as such in a treatment setting. Such reports may focus on the demographics of older problem drinkers, problems associated with drinking, drinking practices, etc. (Apfeldorf and Hunley 1975; Carruth 1974; Rathbone-McCuan and Bland 1975; Rathbone-McCuan et al. 1976; Zimberg 1974*a*, 1974*b*).
- Reports of rehabilitation programs that may be included in studies of hospital wards, outpatient facilities, or housing for the elderly (Duckworth and Rosenblatt 1976; Hoffman 1976; Kantor et al. 1974; Leigh 1980; Plutchik et al. 1975; Rathbone-McCuan and Roberds 1980; Rathbone-McCuan and Triegaardt 1979; Saunders 1976; Van De Vyvere et al. 1976).

Size of the Problem

An early community survey which addressed the question of alcohol problems in an older male cohort was one conducted in New York City (Bailey et al. 1965). Some percentages reported were as follows:

Age	Percent of Probable Alcoholics
45-54	2.3
55-64	1.7
65-74	2.2

Based on this epidemiological survey of drinking, Schuckit and Pastor (1978) concluded that "between 2% and 10% of individuals over sixty suffer from alcoholism." Whether we wish to call it alcoholism, problem drinking, or problems related to alcohol, the range of 2 to 10 percent seems to be supported by subsequent findings.

A Baltimore area study of elderly persons living in the community, in nursing homes, and in domiciliary settings reported that "the rate of alcoholism among the elderly is approximately 12 per 100" (Rathbone-McCuan et al. 1976). This figure, however, may be higher than would be obtained if interviews were confined to elderly persons living in the community; once a survey reaches into nursing homes and domiciliary settings, the percentage of problem drinkers rises. It could be that older people who have drinking problems are more likely to be placed in nursing homes or domiciliary settings, or it could be that reactive problem drinking is a consequence of such placement. Which is antecedent and which is consequent is not evident in the higher alcoholism figures for hospitals and residential settings.

A study of men living in a Veterans Administration domicile for older veterans (*not* alcoholic veterans) estimated that 13 percent of the population were alcoholic (Apfeldorf and Hunley 1975).

A few studies have queried social agencies and care providers about the incidence of alcohol-related problems among their older clients. In a study of 100 care providers in New Jersey, respondents estimated that 7.5 percent of the older persons they saw did have an alcohol-related problem (Carruth et al. 1973). A similar study in Ottawa, Ontario, Canada, yielded an estimate of 14 percent (Welsh 1976).

Alcoholics and problem drinkers occupy a disproportionate number of hospital beds in the United States. Estimates of alcoholism prevalence among male hospital patients range from 25 percent (Reading 1974) to 70 percent (Abbott et al. 1974). Hospital data for older persons reflect many sources of variability. Some studies report only male patients, while others report patients of both sexes; studies may examine records of patients who are aged 60 and over, 65 and over, 50 and over, etc.; the reports come from general medical-surgical hospitals, psychiatric institutions, and psychiatric wards of general hospitals.

One of the largest sources of variability in hospital data is the differing definition of "alcohol-related problems": Some research studies deal with persons officially diagnosed as alcoholics; some utilize questionnaires or interviews of varying merit; and some use the terms "alcoholism," "problem drinking," and "alcohol-related medical problems" as though they were interchangeable and synonymous. Alcoholism usually involves psychological dependency, while problem drinking relates more to problems that develop as a consequence of heavy drinking, e.g., loss of job, spouse, friends. Alcohol-related medical

problems may occur in people who would not ordinarily be classified as alcoholics or problem drinkers. A great deal of accumulated data indicate that prolonged heavy drinking is related to a variety of medical disorders (U.S. Department of Health, Education, and Welfare 1974).

Studies of older medical patients in general hospitals estimate the prevalence of alcohol problems to be between 15 and 49 percent (table 2). Studies of psychiatric wards and psychiatric hospitals report approximately the same range. These studies do not often distinguish between *current* problem drinking and a past history of problem drinking. In a study of patients on general medical-surgical wards of a Veterans Administration hospital, 55 percent of those interviewed said that they were problem drinkers. Half of that group were in remission (Gomberg 1975). For this sample of men, 45 percent of those over 60 qualified as problem drinkers. Two-thirds of this older group were in remission and one-third were still drinking (Gomberg 1977*a*).

What about older persons who come to community mental health centers? Information on this group is sparse not only because of the limited amount of research on alcohol problems of the elderly but also because older persons underutilize community mental health centers and similar facilities. Zimberg (1974*b*) reported a total of 87 persons, aged 65 or older, who came to a community mental health center for help; of these persons, 17 percent were diagnosed as alcoholic. Zimberg estimated that 10-15 percent of older patients "in treatment" probably are alcoholic although alcoholism is rarely the presenting condition. It appears that heavy drinking by an older person may alarm significant others enough to send or bring the older person to a treatment facility, although at this point, no one may be willing to state that the reason for seeking services is problem drinking. Because of embarrassment, the difficulties encountered when help is sought, and the resistance of both treatment personnel and clients, only a very small percentage of those older persons who need help are probably being seen in outpatient facilities (physicians' offices, clinics, Alcoholics Anonymous, community mental health centers). Older clients seem more likely to be diagnosed and counted as having alcohol-related problems when hospitalization finally becomes necessary.

A report on admissions to inpatient psychiatric facilities indicated that, of all admissions to State and county mental hospitals in the United States, 26 percent were alcohol related (National Institute of Mental Health 1972). This percentage appears to have been derived from those diagnosed as alcoholic or manifesting alcohol-related disorders. The 11-12 percent of mental hospital admissions reported for the age group 65 and older (National Institute of Mental Health 1972) is much lower than the figures reported in table 2, possibly because of the high rate of "senility" admissions to psychiatric facilities.

Table 2. Alcohol-Related Admissions to Hospitals Reported by Investigators

Study	Type of Facility	Age	Sex Problems	Percent of All Admissions In Age Group with Alcohol
Whittier and Korenyi (1961)	State mental hospital	60+	M	20
Simon et al. (1970)	General hospital: psychiatric ward	60+	MF	25 32 (men) 15 (women)
Gaitz and Baer (1971)	County psychiatric hospital	60+	MF	44
Rosin and Glatt (1971)	Private psychiatric hospital	65+	MF	33
Daniel (1972)	General hospital: psychiatric ward (Australia)	65+	MF	15
Simon et al. (1968)	General city hospital	60+	MF	28
McCusker et al. (1971)	General city hospital	50+	MF	49 63 (men) 35 (women)
Goldstein and	General hospital	60+	MF	15.5

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Psychosocial Variables

Age. Alcohol problems tend to appear more frequently among the "young old" (aged 55-75) than the "old old" (Neugarten 1976). Perhaps the "young old" person with alcohol problems has lessened his or her life expectancy with heavy drinking, or perhaps the increased medical problems that accompany the aging process act as a deterrent to heavy/problem drinking.

Age at Onset. This may be one of the most important variables related to problem drinking. A sizable number of persons with long histories of chronic alcoholism defy the statistical probabilities and live to old age. These are the aging alcoholics, who had a relatively early onset of problem drinking which has continued for many years; they are appropriately termed *survivors*. There is another group of older persons whose problem drinking is of recent onset and short duration; these persons may be called *reactive alcoholics*; i.e., they had no alcohol problems before their fifties. They respond to stresses, losses, and the negative aspects of aging with depression and problem drinking. Epidemiological data clearly suggest that recently retired, recently widowed men over 65 are a subgroup of older persons at high risk (Bailey et al. 1965). Zimberg (1978*b*) estimated that two-thirds of older alcoholics are early onset survivors and one-third are recent-onset reactive problem drinkers. There may be a third distinguishable group of elderly problem drinkers: those who have had previous episodes of problem drinking. Such *intermittent* problem drinkers may be a sizable group because most alcoholics do not have continuous histories of alcoholism but tend to alternate periods of heavy/problem drinking with periods of sobriety.

This triad of elderly alcoholics was suggested by Carruth et al. (1973) and by Mayfield (1974). Mayfield thought the survivors rare, but studies from the United Kingdom (Rosin and Glatt 1971) and from Australia (Wilkinson 1971) suggest that they are seen quite frequently in hospitalized groups.

Gender. One community survey (Rathbone-McCuan et al. 1976) obtained a male to female ratio of 5:1 for alcohol problems in an older population. Considering the fact that women, with longer life expectancy, constitute a larger percentage of the older population than is true of younger groups, the ratio is striking. This ratio suggests that the older cohort of women carries the normative attitudes and constraints prevalent at the time they grew up. Hospitalized samples show male to female ratios more like 2:1 or 3:1, but these numbers, from table 2, must be interpreted with caution. Women, particularly middle-aged or older women and especially those who drink heavily, seem more prone to hepatic complications than their male counterparts (Gomberg 1977*b*). A British research team, examining male to female ratios for different consequences of alcoholism, found ratios of 14:1 for arrests, 5:1 for mental hospital admissions, and 1:1 for deaths from cirrhosis of the liver (Edwards et al. 1972).

Rosin and Glatt (1971) reported a male to female ratio of 2:3 for elderly patients with alcohol problems in a *private* psychiatric hospital in the United Kingdom. The finding of Rosin and Glatt that the usual male to female ratio was reversed may relate to several factors. The ratio of male to female alcoholics in the United States was, until recently, 5:1. In Great Britain, the ratio at the same time was roughly 3:1, which means that the total pocl of alcoholic persons in Great Britain probably contained a higher proportion of women than was true in the United States. Elderly ladies lapsing into problem drinking may be a British phenomenon. Or, what seems likely is the working of a "grapevine" system in which a particular physician or a particular treatment center is favored by women, the word circulates, and the number of female admissions increases.

A recent paper on family relationships encountered in dealing with elderly alcoholics describes "the triple stigma" of being old, female, and alcoholic (Rathbone-McCuan and Triegaardt 1979). Of the 10 cases presented, 3 were women: a 76-year-old woman with a long alcoholic history, a 60-year-old woman with a history of psychiatric problems and recent development of drinking problems, and a 56-year-old woman who had been drinking along with an alcoholic husband for many years. The diversity across *only* three cases suggests the need for varied approaches for women, as well as for men, in order to deal with longstanding alcoholism and its consequences, with shorter duration reactive alcoholism, and with the *folly a deux* alcoholism of a married couple drinking together, which is frequently seen in younger and middle-aged couples.

Also relevant is the question of whether older women take more medication and whether the risks of drug interactions are greater for them than for older men. It is a well-established fact that women who have alcohol problems are at greater risk for drug interaction effects because they are heavier consumers of tranquilizers and other psychoactive drugs. It appears that this sex differential holds up throughout the lifespan. According to Mellinger et al. (1971), the percentage of women aged 60 and over who use stimulants, minor tranquilizers, sedatives, and hypnotics is larger than the percentage of men in the same age group. For example, 5 percent of the men and 10 percent of the women reported using minor tranquilizers during the past year. This suggests that the problem of drug mixtures and psychoactive drug interactions is more likely to occur among women problem drinkers than among men problem drinkers and that this difference holds up throughout the lifespan.

Ethnicity. Differences in the life expectancies of minorities and whites are reflected in data on elderly alcoholics. Minority groups with a shorter life expectancy than whites are likely to have smaller proportions of drinking problems in the older age groups. A study of admissions to an emergency alcohol health care system (Westie and McBride 1979) reported the following:

Age	Percentage of Admissions		
	Black	Spanish	White
35-59	62.4	59.6	56.1
60 and over	6.2	3.5	20.3

How these differences are related to life expectancy, to use of emergency room facilities by the elderly, to different normative behavior for older persons in different ethnic groups, all need further study. Nonwhite admission rates to public mental hospitals are higher than white rates in the earlier years of life and much lower in the oldest age groups (Gorwitz et al. 1970). Nonwhite hospital admissions of persons with alcoholic psychoses remain fairly level and even decline with age, but similar admissions of white patients rise with age (Locke et al. 1960).

McCusker et al. (1971) studied the prevalence of alcohol problems among new admissions to a hospital in New York City with a high proportion of black and Puerto Rican patients. Patients were classified on a 6-point alcohol abuse scale: no problems, minimal, mild, moderate, severe, and extreme. The last three categories were considered alcoholic. In the age group 50-70, 63 percent of the men and 35 percent of the women were classified as alcoholic. It should be remembered, however, that alcoholics are overrepresented in hospital populations, that the number of subjects who were remitted/unremitted is not known, and that the definition of 50 to 60-year-olds as elderly is questionable.

Arrests and the chronic drunkenness offender. A San Francisco study, which examined arrests for minor offenses other than chronic public intoxication, reported some interesting results: of 722 persons aged 60 and over who were arrested, 82.3 percent were charged with drunkenness (Epstein et al. 1970). The percentage of *all* age groups arrested for drunkenness was 46 percent. The 60-and-over group had the highest proportion of arrests for drunkenness of all age groups. In fact, many of the older men not included in the 82.3 percent were arrested for offenses in which intoxication played a role. The investigators pointed out that antisocial behavior generally declines with age, and were it not for drunkenness, few older persons would be arrested. In the same report, the authors described the law enforcement agencies' attitude as "protective" and suggested that the jails serve as "quasihospitals for quasipatients."

An interaction between age and ethnicity is indicated in public intoxication arrest figures. A study of persons arrested for public intoxication reported that the majority of white men with multiple arrests were in the age group 40-60, while the majority of nonwhite men with multiple arrests fell into the age group 30-50 (Zax et al. 1964). Of the men who live on skid row and follow its lifestyle, the white men tend to be older, the nonwhite men younger. The drift of elderly homeless men toward skid row is a longstanding problem (Bahr and Caplow 1973). This situation is becoming more complex because of the drift of

nonwhites, e.g., Native American men, to skid row areas; these men are often heavy drinkers but are by no means elderly.

Antecedents

For "antecedents" of problem drinking to make sense, it is necessary to separate subgroups of older problem drinkers in terms of age at onset, duration of the problem, and drinking history. There seems to be agreement that intrapsychic psychological or psychiatric determinants play a lesser role in the etiology of an older person's alcoholism (e.g., Glatt and Rosin 1964). But what does this mean if we are dealing with a 60-year-old man who has an alcoholic history reaching back 30 years? He may have become alcoholic by the same routes (psychodynamics or learning process) as any other 30-year-old who becomes alcoholic, and now, as an aging person, he has special problems. Myerson (1978) proposed that as the alcoholic person ages, his or her drinking behavior leads to a crisis which breaks through the denial and forces the person to face the fragile nature of relationships, a low self-esteem, and a sense of failure. Myerson described four crises that may precipitate the older alcoholic into treatment: loss of health, loss of relationships, loss of employment or other adaptive skills, or loss of freedom through arrest or court procedures.

These alcoholic persons grown older are survivors with long histories of alcohol abuse and the strong likelihood of alcohol-related medical complications. Such persons are probably found in hospital or institutional settings although undoubtedly a large number of older "respectable" alcoholics manage to survive while living in the community.

A second group of older problem drinkers may be described as having "intermittent" histories of problem drinking. Such persons periodically turn to heavy drinking in response to severe stress.

A third group, "reactive problem drinkers," may have manifested some neurotic or other forms of disordered behavior during their lives but they have *not* been problem drinkers. When they respond to the stresses and losses of aging by beginning to drink heavily, they are a *new* population of problem drinkers. This is the group toward whom primary prevention measures are most sensibly directed, and indeed some preretirement education programs do include information about drinking. This is also the group for whom therapists report good prognosis.

All elderly alcoholics—survivors, intermittents, and reactives—are responsive to the difficulties of aging, i.e., loss of work, loss of support networks, increased health problems, etc. Therefore, one may speak of *antecedents* or precipitants as the stresses of aging, but that would be simplistic. People bring different strengths and different histories of coping and of problematic behavior into their sixties and seventies. We have yet to learn what the important predisposing variables may be, selecting from an array which may include particular psychophysiological responses to alcohol, tendencies to escape and deny problems,

emotional strengths and weaknesses in coping with stress, and the like. The social environment stresses involved in aging are clearer to us than the individual resources and strengths (or the lack of them) that make resort to alcohol more or less likely. Some of the psychosocial stresses that seem to be of major importance for elderly alcoholics are "depression, bereavement, retirement, loneliness, marital stress and physical illness" (Zimberg 1978*b*, p. 421).

Carruth (1974) reported the results of intensive interviews with 63 male clients of social agencies who were diagnosed as having drinking problems. Problem drinkers' ages ranged from 50 to 73 with a median age of 59; about 25 percent of the men had become problem drinkers within the past 3 years. This group cannot be defined as elderly; half the subjects were in their fifties and 75 percent of them were still working. The men reported more "psychological problems" than their age peers, and 60 percent reported feeling depressed during the past 3 years. They also reported more isolation from family and significant others than their age peers. These reports of psychological problems, depression, and alienation from the family are consistent with all that is known about male alcoholism. Other data show older problem drinkers reporting many difficulties with spouse and relatives; in a study of medical-surgical patients in a Veterans Administration hospital, the question problem drinkers most frequently answered affirmatively was, "Do you feel that you drink too much or used to drink too much?" The next most frequently affirmed question was, "Does your family object to your drinking?" (Gomberg 1975). Of the problem drinkers, 64 percent reported family objections; of the nonproblem drinkers, 7 percent answered affirmatively.

Rathbone-McCuan et al. (1976) reported on the psychological and social characteristics of problem drinkers 55 years of age and older, living in the community, in high-rise apartments, in nursing homes, or in domiciliary settings in the Baltimore area. The problem drinkers identified in this study were not, as a rule, clients of social agencies, and, in fact, 85 percent of those identified by the study as problem drinkers were not receiving any kind of assistance or service related to their drinking problem. Among the subjects 55-69 years of age, 22 percent were diagnosed by the interviewers as problem drinkers; among the subjects 70 and older, 4 percent were labeled problem drinkers. The proportion of problem drinkers varied with the living arrangements, the highest proportion being in domiciliary settings which were 92 percent male. The typical problem drinker was described as male, usually unemployed but appearing at all income levels, and divorced, separated, or never married. The high correlation between marital disruption and alcoholism appears to characterize the older group in the same way that it characterizes all alcoholics, and the pattern of the elderly male living alone as being at high risk for drinking problems appears here, too. When the researchers compared elderly problem drinkers with their normal social drinking age peers, they found a number of differences: problem drinkers reported being in poorer health; they appeared to be

more alienated from society and from their peers; and they reported minimal social participation.

As is true with other age groups and with research literature in general, there is remarkably little written about the older woman alcoholic and the antecedents of her alcohol problems. Glassock (1980) spoke of loneliness, role and identity losses, retirement, decrease in income, loss of spouse and friends, and alienation. Rathbone-McCuan and Roberds (1980) described a middle-class group of older women problem drinkers in treatment as "suffering from boredom, role loss or fear of loss. However, the overall impression was that either perceived emptiness or crisis situations had driven them to drink" (p. 421).

Very little is known about the psychological and social characteristics of those who become elderly alcoholics. In interviews, they report more depression and feelings of alienation and isolation than their age peers. Did they turn to alcohol because they had these feelings antecedent to the problem drinking? Have these feelings appeared because of the drinking? Did they feel depressed and isolated before drinking heavily and now find themselves even more depressed and isolated? The field of alcoholism studies has few answers to these questions for young, middle-aged, or older men and women.

Symptoms

There is a limited amount of information comparing the symptoms of problem drinking in middle-aged and older alcoholics. In comparing men 60 and over with men 40-49, Cahalan (1970) reported a few areas of difference that may be useful in casefinding and rehabilitation. The older alcoholic men more often reported binge drinking; problems with spouse and relatives; problems with friends and neighbors; financial problems related to drinking; problems with the police or accidents; and slightly more health problems than did the middle-aged alcoholic men. The middle-aged men reported more symptomatic behavior and psychological dependence on alcohol, more belligerence associated with drinking, and more alcohol-related job problems. These differences suggest that, while employee assistance programs may reach the alcoholic under 60, an outreach program for those over 60 probably needs to involve family and social networks as well as employee programs.

The most striking difference is the greater number of problems with police or accidents for the older group. However, in reporting problems associated with drinking for each decade from the 1920s to the 1970s, Cahalan (1970) noted that men in the 21-29 age group reported the same percentage of problems with police or accidents as the men in the 60-69 age group. This finding suggests a bimodal relationship between age of the alcoholic and trouble with the police. Could it be that for these age groups—the young and the old—intoxication is more likely to occur in public places? Younger men exhibit more belligerent behavior

than older men when they are intoxicated so getting into fights cannot explain the bimodal relationship; perhaps for young men trouble with the law is related to belligerence and to public intoxication, whereas for older men, it is related only to public intoxication. Could this be related to class status? Do lower income young men and lower income older men contribute disproportionately to the arrest figures?

Rathbone-McCuan et al. (1976) noted these alcohol-related problems for older men: "psychological dependency, family problems, health, and legal problems." Thus, in two studies, one of a national sample (Cahalan et al. 1969) and one in Baltimore (Rathbone-McCuan et al. 1976), there is agreement: Older alcoholics drink to alleviate depression and to escape life problems, and their primary alcohol-related problems are with family, health, and the police. As in comparisons of men and women alcoholics, we will find many symptomatic behaviors and consequences the same for the young and the old. We will also find unique aspects of alcoholism for each age group.

As reported by Cahalan et al. (1969), the small difference between men 60 and over and men 40-49 regarding health symptoms indicates that "older alcoholics generally consume smaller quantities of alcohol because of a lower tolerance, and therefore have fewer acute medical problems associated with their alcohol consumption. Chronic medical problems, such as cirrhosis of the liver or peptic ulcer, may be present, but the need to detoxify from alcohol and treat alcohol withdrawal manifestations is quite rare. Therefore, the physical distress associated with alcoholism is seen less in elderly alcoholics" (Zimberg 1978*b*, p. 422).

Another health issue concerns alcohol ingestion by older persons who may be drinking moderately but whose modest alcohol intake may worsen an ongoing medical problem (Schuckit 1980). Also important is the fact that older persons take disproportionately larger amounts of medication than younger persons and more information is needed about medication-alcohol interactions. The drug companies have attempted some patient education ("LaRoche launches nationwide campaign" 1979). But reports from different sources vary in the extent to which this is seen as a frequent problem: "Mixing medications and alcohol was not seen as a common problem except among substance abuse agency respondents, over half of whom (52%) reported that mixing medications and alcohol was a moderate or very common problem among their senior clientele" (Michigan Office of Services to the Aging 1978, p. 23).

The problems of drug interactions and polydrug use are similar for older persons and for women in general; i.e., the issue is one of medications plus alcohol rather than illegal drugs or street drugs plus alcohol. There may be problems with even moderate use of alcohol. Sobel (1979) noted that, "although relatively undocumented in this population, the multiple substance abusing geriatric is more likely to be a mild/moderate alcohol consumer of some duration, who then adds the regular use of psychoactive drugs to create a 'dual addiction'" (p. 4).

Casefinding, Outreach, and Treatment

The major problem areas for older alcoholics are those relating to significant others, to health, and to trouble with the police. Thus, education in identifying older persons with drinking problems should be directed to physicians, paramedical personnel, hospital emergency room personnel, police, home-visiting health agencies, and organizations specifically for older persons such as senior centers. Other important sources of casefinding are, of course, adult children and other relatives.

Needful persons may be brought to the attention of mental health and alcoholism facilities in a variety of ways, for example, by calling an information and referral agency. Another example might be special alcoholism programs in housing projects for older persons ("Mishaps" 1978).

The following are some of the more relevant questions and findings related to effective intervention for elderly problem drinkers:

- Must the older person be aware of others' concern about his or her drinking? Some believe that there must be an openness about these concerns and that the shame and denial must be dealt with (Gomberg 1980); others believe that the confrontation used to reach younger alcoholics is not necessary with older ones (Zimberg 1978*b*).
- Are Alcoholics Anonymous and substance abuse treatment facilities appropriate resources for older problem drinkers? Alcoholics Anonymous (1979) has issued a pamphlet specifically for the older alcoholic—"Time to Start Living," which addresses the drinking problem. On the other hand, Zimberg (1978*b*) reported that the depression, stresses, and situations that contribute to the drinking problem should be addressed. Thus, the question is, Should alcoholism per se or the precipitating stresses be addressed in treatment?
- There is general consensus that prognosis is good for older problem drinkers, particularly for recent-onset older alcoholics. Older clients are more likely to complete a course of therapy compared with other age groups (Pascarelli 1974; Schuckit 1976; Singh and Knezek 1978; Wilkinson 1971; Zimberg 1974*a*).
- "Social therapies" are most useful, and the rebuilding of social networks is critical in treating the older problem drinker. Such rebuilding may involve family members, Alcoholics Anonymous, peer groups, and self-help organizations of older persons (Glassock 1979; Leigh 1980).
- How do alcoholism agency personnel respond to the older problem drinker? A study of general service providers' attitudes toward older clients shows that nurses have more positive attitudes than other professional groups, and younger professional workers tend to have less negative attitudes than middle-aged

workers (Wolk and Wolk 1971). Marden (1976) commented, "Often, the criteria established for acceptance in treatment services are not appropriate to the elderly as agencies prefer to concentrate their attention on clients with whom they can demonstrate 'success'." There are problems, then, of resistance not only from the potential client but also from the agency. A related problem is the lack of coordination and communication from one agency to the next so that the older problem drinker is easily "lost" in referral.

- Older clients are more likely than younger ones to have problems with transportation and finances; agencies dealing with older people need to be sensitive to these problems.
- There is a lack of agreement about the use of medication by older problem drinkers; some physicians feel that prescribing minor tranquilizers or sedatives is ill advised. Attitudes toward disulfiram use are mixed, with some researchers expressing caution about its use (Stotsky 1972) and others favoring "reduced doses" where not contraindicated (Galdi and Vertes 1977). Some physicians believe that antidepressant medication gets good responses (Zimberg 1974*b*). Women lead men in the use of prescription psychotherapeutic drugs except in the age group 60-74, where men use antidepressant medication twice as often as women (Mellinger et al. 1974).
- Is sobriety the only goal possible for a treatment program? Two Canadian studies suggest that for the survivor group—long-lived chronic alcoholics—reduction in the amount of alcohol consumed may be a valid goal (Saunders 1976; Van De Vyvere et al. 1976). Other programs promote the maintenance of total sobriety in older chronic alcoholics (Alcoholics Anonymous 1979; Older Problem Drinkers 1975).

A Note on Prevention

Two excellent settings for prevention programs directed toward older persons are self-help organizations for older persons and preretirement training programs conducted by industrial firms and other businesses and organizations.

Prevention, at least *primary* prevention, can be directed toward the reactive problem drinker, that is, the person whose alcoholism is of recent onset. However, we need much more information about and a greater understanding of precipitating stresses for this group. For those with long histories of alcoholism, tertiary prevention is most appropriate. Tertiary prevention, i.e., treatment, may extend an older alcoholic's life and help facilitate his or her adaptation to the problems of aging.

Research Needs

More information is needed about *the drinking behavior and drinking patterns* of Americans 60 years of age and older. It may very well turn out that definitions of light, infrequent, moderate, and heavy drinking should be age-specific and that the quantity/frequency indexes now in use are inappropriate for older persons. Although institutionalized older people are more readily available as subjects, research must sample the approximately 95 percent of older persons who live in the community. Surveys should take into account variables such as urban-rural living, socioeconomic status, ethnic and sociocultural differences, and religion. Surveys should ask about long-established drinking patterns, the use of leisure, and the social groups and drinking behaviors of peers. Past survey research on drinking behavior has been criticized for inadequate coverage of elderly populations because people living in group quarters such as retirement communities were excluded and because questions relating to problem drinking tended to emphasize work-related problems or arrests for driving while intoxicated, both of which may be less relevant for older persons.

Related to such surveys is the need to study societal attitudes toward older persons' drinking. Such study could be done in the context of research on general attitudes toward older persons.

The issue of cohort differences is relevant. If older people drink differently, is this specific to their generation, or can we predict from older persons' drinking behavior how the current generation of young and middle-aged adults will behave with alcohol as they become older?

More information is needed about *the incidence and prevalence of alcohol problems* in older populations. Such study must include urban-rural differences, social class differences, etc. The different stresses and losses of aging must be considered, for example, the effects of retirement, illness and limited mobility, lessened income, and loss of spouse or close friends.

These research needs should be given the highest priority because planning and intervention cannot move ahead until there is information about the size and nature of the problem. In addition, a number of gaps in the available data should be addressed:

- The effects of alcohol on the biology of older persons. Because of changes in fatty tissue and in metabolism with aging, the effects of alcohol on physiological functioning in older men and women need to be studied. What are some of the effects of aging and alcohol consumption on the central nervous system?
- The psychological effects of alcohol on older persons, i.e., the effects of very small, moderate, and larger doses of alcohol on sensorimotor function, cognition, mood, and affect. Studies of cognitive impairment among older persons need to distinguish alcohol effects from aging effects and should include nonalcoholic and alcoholic persons. Studies of memory impairment and

other functioning should include older alcoholics with both short and long histories of alcoholic drinking.

- The interactional effects of alcohol and medications widely prescribed for older persons.
- The differences among subgroups of older problem drinkers, e.g., gender, ethnicity, class, and age of onset.
- The relationship between problem drinking and other psychiatric diagnoses, e.g., depression and suicide attempts, organic brain syndrome. Research should be directed toward identifying criteria that permit a more adequate distinction between different diagnostic categories presenting similar clinical pictures of confusion and disorientation.
- Consequences of problem drinking in terms of health problems, family problems, legal problems, financial problems, and increasing isolation and alienation. Research is needed on the consequences of problem drinking which serve as a basis for referral.
- The effectiveness of different outreach and early casefinding methods, e.g., senior centers, existing agencies, and self-help groups. Research is needed to develop innovative approaches both for prevention and for finding the "hidden" recent-onset problem drinker.
- The effectiveness of different treatment modalities, approaches, and interventions. Should older persons be treated for their alcohol problems or for the environmental stresses that precipitated the problem? Should drugs such as Antabuse be used? Are there unique aspects of treatment involved in dealing with the elderly client or will commonsense modification of present treatment techniques suffice?
- Barriers to treatment, e.g., shame and denial, underutilization of resources by elderly persons, lack of coordination and communication among different health care agencies, attitudes of physicians and other substance abuse personnel.
- Prevention of alcohol problems among older persons who might begin problem drinking late in life.

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Chapter 10

Ethnic and Racial Variations in Alcohol Use and Abuse

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Abstract

This chapter provides an overview and a context for thinking about biological and sociocultural research in various ethnic groups. The logical constraints of the nature-nurture metaphor are explored. Ethanol and acetaldehyde metabolism studies in different populations are reviewed and the possibility of a biochemical path to addiction via cross-population research is suggested. Consideration of sociocultural influences in use and abuse of alcohol by different ethnic groups is considered, with special attention paid to nonstatistical studies into drinking/nondrinking social contexts. It is suggested that knowing the biological and sociocultural opportunities and limitations in population and culture-specific terms makes the best sense for research, treatment, recovery, prevention, and overall policy. Learning how to respect control of definitions is the subject of a further discussion about the disease concept of alcoholism and the function of terms in the alcohol field. Understanding the selective perception and use of terms for social processes that assist individuals, families, and whole groups to recover from problems with alcohol are crucial in developing policy for special populations.

Introduction

This paper provides an overview of issues relevant to the papers on various alcohol abuse and alcoholism problems in special populations. It includes a discussion of some recent trends in biomedical and psychosocial research. The paper avoids extensive review and instead tries to provide a context in which to weigh the insights presented in the papers on special groups. Here we will specifically look at the nature-nurture controversy as exemplified by studies about drinking abilities in various ethnic groups, the socalled "firewater myth." After some of the truths and fallacies in the myth are exposed, some of the criticisms of the "disease concept" of alcoholism will be considered. The purpose here is to expose these metaphorical constructs for what they are—momentary definitions in a sea of changing facts and perceptions about

the moral good. The value of using these metaphors for special populations is questioned because nearly all the social and biological facts gathered to create the definitions are from Anglo cases. After all, this paper and the ones that follow are about "special populations." It is suggested here that knowing who controls definitions is the first step in trying to understand the meaning of who is or is not suffering from an alcohol-related problem. This is especially true for the firewater myth and for "alcoholism" as these concepts are used to characterize the use of alcohol by various ethnic groups. The paper then looks at alcoholism treatment and self-help as exemplified in special populations as well as in the general population. The adaptability of Alcoholics Anonymous as a revitalizing process to different cultural groups is discussed. And as others have done, this reviewer argues that when people are getting better, whole communities can get better.

Review of Research Literature

Nature-Nurture and Beyond

If we could ignore cultural, historical, and biological variations, our search for an understanding of alcoholism and related problems would be greatly simplified. Research scientists who are products of a specific biological population and cultural tradition do not often think beyond the specific processes they think they understand through their research studies. They may in fact think that what they know holds true for all other biological populations and cultural traditions. Our thinking is usually culture bound. Because of this tendency we need to become more aware of biological, social, psychological, and cultural variations.

A basic tenet of science is that systematic studies of problems of alcohol abuse or any other phenomenon must stand up to questions about the universality of the findings. This is a point the public often overlooks and that many research scientists fail to grasp. It is a critical point for understanding the state of the art and science of dealing with alcohol abuse and alcoholism among American Indians, black Americans, Hispanic Americans, and Asian Americans—the so-called "special populations."

When persons interested in special populations study books, articles, and papers on particular topics in the biomedical or social sciences, many questions emerge. For example, does a particular survey of drinking quantity/frequency take into account the unique customs and contexts of the group studied? Do the findings from a study hold true for a group only at that particular time? Do the findings for some gene-based relationship hold for a similar pathway in a different biological population within the species? Put another way, what common cultural, historical, biological, and psychological processes and ideas can we safely merge into social policy? Which can we adopt as group values or principles, or embrace as an individual goal?

We need to say a lot more in our titles and our abstracts about the limits of the findings reported. And in our research designs we have not taken full advantage of existing cultural differences, historical trends, or clear-cut biological variations to provide experimental contrasts. However, a growing number of studies are using these approaches.

The search for the causes of alcoholism has been a long and complex process. Some researchers have focused on the pathological effects of alcohol abuse and alcoholism. Others have made serious attempts to look for the development of alcohol abuse predispositions in an effort to explain the many forces at work—biological, sociological, psychological, and cultural—in creating individuals and groups that consume excessive amounts of alcohol and that ultimately suffer from its harmful physical, social, and spiritual effects (Ewing and Rouse 1978; Galanter 1979; Gibbins et al. 1974; Kissin and Begleiter 1971-1974; Seixas 1977; Tarter and Sugerman 1976).

One of the dilemmas created in the multidisciplinary pursuit of causal influences is the so-called nature-nurture controversy. In the nature-nurture controversy arguments exist about the relative importance of biological-physiological-biochemical phenomena in contrast to social-psychological-cultural phenomena. Although this is a general scientific problem, its legacy includes years of controversy, specifically in the alcoholism field. For example, there is the age-old question about how alcoholism is transmittable from one person to another, one generation to another, or one group to another. Does transmission take place through exchange of genetic material and/or through the inheritance or modeling of values, beliefs, or psychological sets? For a few researchers working with special populations, the major challenge during the past decade has been to eliminate the nature-nurture barriers by creating a biocultural continuum to integrate aspects of certain research disciplines and approaches. We will now turn to an example of this sort of struggle, one central to special populations—the firewater myth.

In the United States, the "firewater myth" has been used primarily in discussions about drinking by American Indians (Leland 1976). *It is the idea that Indians cannot hold their liquor.* This folk wisdom about the ability or inability of a group to consume large amounts of alcohol is of course not limited to American Indians. The firewater myth in other forms is found throughout the drinking world, wherever one ethnic group tries to claim strength or superiority over another (Schaefer 1979). In many respects the myth may be more an example of the maintenance of ethnic boundaries or ingroup identity traits than an attempt to be truthful about drinking ability. Yet, in the latter guise it has attracted the imagination of a growing number of alcohol researchers who want to test the validity of some of the assumptions contained in the myth. Two sets of studies illustrate ways this simple idea has stimulated a considerable amount of research relevant to special populations: first, cross-racial alcohol metabolism studies (nature) and, second, contextual studies of drinking in various ethnic groups (nurture).

Nature: Differences That Matter Are Biological

An important premise of the firewater myth is that there are some special biologically based components present or missing in a specific ethnic group. This special biological status is believed to make alcohol consumption experiences *qualitatively* different for the group in question.

During the 1970s, researchers tested alcohol metabolism rates among a variety of ethnic groups around the world (Bennion and Li 1976; Ewing et al. 1974; Farris and Jones 1977; Fenna et al. 1971; Hanna 1976, 1978; Lieber 1972; Marinovich et al. 1976; Reed 1977; Reed et al. 1976; Schaefer 1978; Seixas 1978; Wolff 1972; Zeiner et al. 1976, 1979). The basic strategy was to see if a standardized dose of alcohol would produce marked trends in absorption and clearance of ethanol. Although numerous technical problems and unforeseen variables emerged from this first generation of studies, we learned that, generally, Orientals, or members of the Asiatic gene pool, tend to react differently to these doses of ethanol. The "classic" Oriental reaction includes rapid absorption and elimination of ethanol, rapid increase in levels of acetaldehyde, facial and body flushing, increased heart rate, decreased blood pressure, sweating, nausea and often vomiting, headaches, diarrhea, and general dysphoria (Ewing et al. 1980). Recent studies have indicated that members of the Asiatic gene pool who are more distantly related (Eskimos, Indians in North and South America, Hawaiians, Indochinese, and Asiatic people of mixed ancestry) have milder versions of the above symptoms in some cases (Hanna 1978). Care must be exercised in generalizing about these alcohol-related symptoms. Even among the Japanese, with whom perhaps the most intensive alcohol metabolism research has been done, there have been consistent reports that 20-25 percent of the Japanese subjects studied do not manifest the full list of symptoms indicated (Stamatoyannopoulos et al. 1975). And some of these symptoms are not unknown among other racial groups.

However, research on ethanol and acetaldehyde metabolism that stems directly from curiosity about biological factors underlying the firewater myth has a connection to alcoholism. The work in rate-limiting metabolism and related enzyme systems has a direct implication for amounts of alcohol that drinkers drink. And we are led to believe from our studies that the bad feelings, or dysphoria, are a direct result of these internal biochemical reactions to the alcohol insult to the body. We have been led to believe further that the amount consumed has a direct link to psychosocial and medical complications or well-being.

Research into the causes of the classic adverse reaction to alcohol has included consideration of learned aversion, diet, special anatomical makeup, and enzyme systems. The most promising, and also the most researched, of these factors, is special enzyme systems (Kalant et al. 1971; Murry and Price 1972; Vesell 1972). Enzymes like alcohol dehydrogenase (ADH) break down ethanol molecules into acetalde-

hyde (AcH) (Kalant 1971). Some populations have very efficient ADH. In fact, over a dozen ADH variants have been identified. And sophisticated work is under way to further detect, describe, map, analyze, and modify these compounds (Li 1980). The rapid breakdown of ethanol and the subsequent production of acetaldehyde help to explain the rapid rise and fall of blood and breath ethanol levels in test subjects (and presumably the general population of drinkers) with these speedy liver enzymes.

Studies have shown that Orientals exhibit not only rapid absorption and clearance of ethanol but also rapid accumulation of acetaldehyde. In fact, the generally adverse reactions listed above are highly correlated with increased levels of blood acetaldehyde in test subjects. Acetaldehyde metabolism is apparently a slow process. Aldehyde dehydrogenase, the enzyme for breaking down AcH into acetic acid, is less efficient than the variant forms of ADH (Von Wartburg and Schurch 1968). It is less understood in cross-racial terms. It is unclear whether aldehyde dehydrogenase acts more slowly in Orientals than in other racial groups, or whether the overproduction of acetaldehyde simply requires the system to take a longer time to reduce AcH levels. In addition to the lack of broad studies of various biological populations in this area, instrumentation and measurement problems force researchers to use proxy measures like breath acetaldehyde for indicating the relative blood acetaldehyde levels. Although these technical matters may seem unimportant, the lack of precision does reduce the power of explanation.

Several proponents have argued that the Oriental adverse reaction to alcohol is clear evidence of "protection" from excessive drinking and alcoholism—providing a sort of built-in Antabuse reaction (Ewing in press; Ewing et al. 1980). This view, coupled with historical evidence of low alcoholism rates, makes a compelling argument for biological forces being reinforced by cultural arrangements (Barnett 1955; Maghbouleh 1979). People who naturally feel bad and get sick when they drink even relatively small amounts of alcohol are not likely to ever want to drink a lot of alcohol, unless for some reason they are strongly motivated to feel bad. At least so the argument goes (Schaefer 1979).

There also is an argument at the other end of the alcohol and acetaldehyde metabolism continuum. Consider instances when alcohol is metabolized at a rate slower than the Oriental rate and when test subjects under alcohol challenge report feeling good, "drunk," and "high" and when heart rate, blood pressure, and other physiological measures are only moderately changed compared with the person's nonintoxicated state. Such reactions are commonplace among members of the Caucasian race and in small groups of black Americans, American Indians, and South Indians of presumed mixed ancestry (Schaefer 1978, 1979). Caution must be used in making any generalizations from these few studies. From a logical viewpoint, however, people who experience pleasant, although altered, physical feelings while mildly intoxicated might be willing to repeat the alcohol experience.

Alcohol acts here as a potent reinforcer. The Caucasian group with moderate physical effects and pleasant emotional reactions to small challenge doses of alcohol has been thought of as being "at risk" or "predisposed" to alcohol abuse and alcoholism (Ewing in press; Schaefer 1979).

With preliminary evidence pointing to group variations in alcohol metabolism and acetaldehyde accumulation, it is tempting to infer genetic bases for these differences (Kopun and Propping 1977; Reed 1977; Seixas 1978; contrast with Lieber 1972; Schaefer 1978, 1979). This is particularly fascinating and paradoxical, given recent studies of the elevated levels of acetaldehyde in alcoholics and their offspring and of acetaldehyde condensation products—the isoquinolines and the beta-carbolines (Blum et al. 1978; Eriksson and Schuckit 1980; Melchior and Myers 1977; Myers 1978; Myers and Melchior 1977). These condensation products have been shown to produce addictivelike drinking behavior in experimental animals. Although provocative, these addictive models have come under criticism (Kissin 1979). Suffice it to say that if some of the biochemistry work is verified, showing a link between chronically high acetaldehyde levels or accumulations of acetaldehyde and a penchant for continuing to consume alcohol, the work with alcohol metabolism stimulated by the firewater myth will take on added importance. The paradox, of course, is that groups (perhaps individuals) that we now view as "biologically protected" from alcohol abuse and alcoholism may well be in the highest risk group. They may be high risk if they continue to drink in spite of the dysphoria.

Based on the chain of connections from the drink/don't drink decision to slow or fast addiction, we can raise several questions. Can "biological protection" be overridden via psychosocial-cultural stresses that ultimately lead individuals or groups toward addiction? Why would people so "protected" want to drink if alcohol always makes them feel so terrible? Might people who generally feel good when they drink eventually develop this acetaldehyde addiction pathway? If there is proof of an addiction pathway(s) via acetaldehyde or other biochemical linkages, can pathway(s) be blocked? If they can be blocked, should they be blocked? Is there a social and cultural future for even moderate alcohol use in society?

Clearly, more research on biological factors among different populations is needed to supplement what we have learned so far. No definitive studies on Hispanic American populations have been done. Alcohol metabolism research on black Americans and other ethnic minorities has yet to be published (Ewing 1979). Very little biological research on alcohol problems among ethnic minorities is under way. However, one very promising line of research is alcoholic marker studies using superoxide dismutase in samples of black alcoholics (Del-Villano et al. 1980). Unfortunately this research is not concerned with causal relationships per se. Nonetheless, screening tests to assist in better treatment of alcoholics would be of great assistance.

Nurture: Differences That Matter Are Social, Psychological, and Cultural

Another important premise of the firewater myth is that there is something very different about the manner in which people in a particular ethnic group consume alcoholic beverages (Leland 1976; MacAndrew and Edgerton 1969). The myth depends and builds on exaggerated beliefs about the excessive consumption or abstemiousness of the "other group"; whichever is the case, "they" are different. There are many theoretical spinoffs of this assumption in the myth. A large and complex literature has developed (Heath 1979). There are pan-human generalizations based on cross-cultural studies. There are regional and societal generalizations. There are local-level and case studies. All attempt to describe and explain intergroup and intragroup drinking behavior.

This social science focus on alcoholism continues, with a detailed literature being produced on some ethnic groups (Mail and McDonald 1977; U.S. Department of Health, Education, and Welfare 1978; White Cloud Center 1979). We have seen recently the emergence of descriptive and survey studies from native writers on alcoholism among their own people (Harper 1976; Longclaws et al. 1980). Comprehensive interdisciplinary and interethnic teams of researchers are studying alcohol use and abuse patterns at the local level (Weibel 1980).

These developments are exciting in many respects because they provide a large quantity of specific data for comparative purposes. They begin to provide opportunities for indepth analysis of particular problems in a single cultural tradition. Unfortunately, because there are so many studies of varying scale, varying technique, and varying quality with respect to reliability and validity of results, few of the research findings can be put to practical use (Heath 1978). Efforts at synthesis are few and far between (Ewing and Rouse 1978; Keller 1979). Most researchers shun the incentives from the Federal institutes to obtain grants to synthesize ideas about alcohol use in different ethnic groups. For a growing number of researchers who might try, the disciplinary politics and bureaucratic hassles are not worth their time. It should not be terribly surprising, then, that research findings are uneven and that stereotypical thinking like the firewater myth continues in scientific circles and in the general public.

However, emerging from this competition for scarce dollars for research are some fresh insights. Perhaps of all the social science work being done on alcoholism, ethnic field studies on drinkers and their social networks is currently the most distinguished. Some examples of this work follow.

In 1977, anthropologist Joan Weibel formed a research team at the UCLA Alcoholism Research Center (Weibel 1980). Her problem was to go beyond the American Indian statistical survey data. Those data indicated a wide variation in American Indian drinking styles, showing one tribe or community drinking more or less than others. She focused

instead on the personal self-regulation mechanisms among the existing drinking styles in urban-based Indian groups—how the groups control their own drinking and the cultural contexts in which these formal and informal rules operate.

Weibel collected data using ethnographic techniques, with help from a cadre of skilled American Indian research assistants. Intensive life history data were collected through interviews. And participant observers personally attended a wide range of Indian drinking and nondrinking settings in Los Angeles. In this manner Weibel was able to contrast expectations and intentions with actual behavior in a "natural" cultural setting. A large sample (scores) of representative tribal members were interviewed and extensive amounts of time (hundreds of hours) were spent in participant observer activities. Weibel herself researched many cultural scenes.

Similarly, work at Brown University by anthropologist Dwight Heath's postdoctoral fellows is also at the center of this new wave of intensive ethnic study. Among Hispanic Americans, this research has explored the pain and pleasure involved in migration; the accompanying drinking styles and context-relevant problems; and frustrating attempts to get access to alcoholism treatment, in competition with other groups in the area. Ethnic studies at Brown University also have focused on American Indian, blue-collar Anglo, Armenian American, and Italian American drinking scenes (Freund 1979; Gordon 1978, 1981; Heath and Cooper 1981; Salvatore 1979; Thomas 1978). Their purpose has been to sensitively describe patterns of alcohol use within the current cultural context of selected ethnic groups.

These studies and others like them help us better understand the truths about the firewater myth. Each cultural group experiences its own drinking opportunities, limitations, and functions, which combine into different lifestyles played out against the same contemporary American (largely urban) backdrop. Contrary to the exaggerations presumed by the myth, drinking is structured within well-defined social status and role expectations. Group behavior varies depending on the setting and circumstances within the moral network where the behavior is acted out. There are well-defined customs and roles with sanctions that are enforced by the group. These regulate drinking episodes. There are marked behavior expectations and actions between different factions within the general ethnic group. The actual frequency of physical violence in any ethnic group is small compared with the potential created by the stress inherent in the urban drinking scene. These potentially violent episodes are often defused by a limited number of very effective peacekeeping strategies including humor, play-acting, and self-restraint.

Alcohol studies like those described above go well beyond what has often been thought of as social science data. These studies of cultural context and patterning are not simple to do. They go beyond censuses and demographic profiles. They do not adhere to strict sampling designs. They take time and a willingness to participate in ongoing

events. They are opportunistic, personal, and frequently subjective. But they are thorough. And from these data objective and distinctive insights are made that the people studied can perceive as real. Context studies add flesh to the bones of statistical data, to say nothing of mere anecdotal data. The coupling of quality data with quantity data generates new meaning for drinking and nondrinking behaviors.

It should also be clear that, although only a handful of studies are given as examples, the aggregation of data from these and other social science approaches can lead to profound insights that would be useful to decisionmakers. These studies have provocative implications for more sensitive, professional intervention and prevention procedures. They provide background material for better indigenous local planning, policymaking, and group action. Perhaps of equal importance, alcohol studies in special populations help us develop a more sound social and behavioral science—one that can stand up to questions about universality and relevance.

This brings us to a broader consideration of categories and meanings. The next section briefly reviews the progression of cultural meaning for alcohol problems in general.

Immorality, Sickness, or Boundary Maintenance?

The firewater myth is a statement of folk wisdom about the presumed inability of some other group to handle alcoholic beverages. The biological aspect of that myth does not accurately reflect the facts. Yet, in pointing out its inaccuracies, we have found a new, intriguing, but unproven, chain of biochemical links that might provide a biological basis for addiction. The cultural aspect of the myth is equally inaccurate. For example, contrary to the myth, certain highly visible urban-dwelling American Indians *can* and do drink inordinate amounts of alcohol. But then, so can some black Americans, Hispanic Americans, and even Asian Americans under certain circumstances. The same holds true for Anglos or any other group.

The main flaw in the myth is its concentration on extremes, exaggerating for purposes that transcend the statements in the myth itself. As a straw man, the myth has served a useful purpose. In the process of showing where it is wrong we have discovered the importance of context. The same person or group may behave one way with alcohol under some circumstances and very differently under other circumstances. This raises serious questions about some of the most sacred concepts of alcohol studies, in particular the disease model.

The disease model as set forth by Jellinek underplayed context (Jellinek 1946, 1952, 1960); context was assumed to be unimportant. With our growing appreciation for context, *drinking situations*, not just the individual, become a focus of attention. It is time to review the implications of context for the drunkenness-as-disease metaphor.

This metaphor has dominated biomedical and psychosocial alcohol research since World War II, when it replaced the drunkenness-as-moral-wrong model (National Council on Alcoholism 1972). These two models imply different solutions to drinking problems. Under the old model, alcoholics were held accountable, labeled, and punished for their drinking behavior. Under the disease model, the alcoholic is assumed to be sick—unable to control his or her drinking behavior. According to current thinking, the alcoholic is sick and should be helped, not punished. Important manifestations of the disease model are emerging in some regions of contemporary America. Increased respect is accorded many recovering alcoholics who publicly disclose their recovery. In some parts of the country treatment for alcoholism is a growth industry. Empty hospital beds are turned into alcoholism "slots." The disease concept has become more integrated into the political and economic consciousness. Evaluations are being done and cost-benefit questions are being raised nearly everywhere. There is a growing perception that alcoholism therapy is a critical human services test case.

One problem, however, is that the drunkenness-as-disease model was based on data from Anglo alcoholics and has been assumed, without confirming research, to apply to all cultures. Though not a part of Jellinek's original formulation, the disease model eventually progressed to incorporate the assumption that alcoholism is an irreversible disease, that the patient would die unless she or he abstained from alcohol for life. Just how broadly have these ideas spread? How acceptable are they to different groups? Does it matter that these ideas originated in America's middle class?

Abrupt changes, like sobering up for a chronic alcoholic, require drastic adjustments for the problem drinker and those persons in his or her social network. Cummings (1980) vividly describes this process. The physical dependency of the addict is relatively simple to undo, taking days or weeks. But rebuilding a lifestyle is not easy. Lifestyle changes therefore become the main focus of the alcoholic's remaining time. These sobering facts account for the strength of the alcoholism recovery movement in parts of the country. They also help to explain why in some areas a continuum-of-care philosophy has developed to provide support systems for alcoholics and their families (Anderson 1979). The continuum-of-care provides easy access to information about alcoholism; intervention consultations; diagnosis of alcoholism; referral to appropriate treatment; multiplex treatment; and aftercare for the alcoholic and his or her family. These treatment and related systems are outgrowths of the Alcoholics Anonymous self-help movement, practical experience in broader institutionalized help systems, and behavioral science experiments based on the disease model. And we know these ideas are spreading along recovery paths in different ethnic groups.

Biomedical researchers, on the other hand, have been attempting to establish the exact addictive pathway. Although the effort has been

comparatively unrewarding, scores of volumes have been written on the development of tolerance and withdrawal symptomatology. And notice how virtually none of the biological variations have been explained. Repeated efforts have been made among Caucasian populations to verify how and when alcoholics develop "craving" and "1oss of control" (Ludwig and Wikler 1974; Mello 1968, 1972; Mello and Mendelson 1970, 1971; Mendelson 1964; Paredes et al. 1973; Pattison 1968). These key traits have been assumed over the years to be part of the addictive process. But recent critics have dismissed "craving" (Ludwig and Wikler 1974; Pomerleau et al. 1976; Roizen 1977). Lately, some scholars have even suggested the opposite—drunkenness is probably better thought of as an experience in self-control, not loss of control (Collmann 1980). But these are psychocultural phenomena requiring new studies of "natural" intoxication and withdrawal in behavioral terms. Psychometric studies are helpful but inside of behavioral contexts. We need descriptive studies here.

Through carefully controlled experimental studies and observations in natural settings, it has been shown that even heavy drinkers exercise some control over their intoxication (Room 1975; Wikler 1961, 1973). Being a heavy drinker is a social role. Intoxication and withdrawal are human experiences filled with meanings and they are strongly influenced by the drinker's personal expectations. These expectations are in turn derived from and maintained by moral and social networks, or behavioral contexts. Despite such indications, the existence of social meanings and controls over individual and group drinking (especially heavy drinking or alcoholismic behavior) has frequently been ignored or denied as an essential research topic. The resulting model would be more complex than an all-or-nothing biological addiction model in which the drinker either is or is not an alcoholic. If you drink, of course, you can become an alcoholic. Accepting the label "alcoholic" implies you cannot drink at all. But how has the label been applied and accepted in different populations?

In order for the alcoholic to be identified for help and assistance via the Anglo disease model for alcoholism, a person must acknowledge the range of problems that alcohol has caused in his or her life. Without self-disclosure there can be no help. Curiously, most alcoholism professionals consider the denial of alcohol-related problems to be a surefire signal that a problem exists. This is where special populations issues are raised to a high level: *self-disclosure and denial are culturally variable*.

In many respects the alcoholic label is subject to the same dynamic as ethnic stereotypes (Henry 1963; Roman and Trice 1968; Scheff 1966; Townsend 1976, 1977, 1979). Alcoholism is perceived selectively, depending on the viewpoint of the beholder. The label acts to set ingroup-outgroup boundaries. Some people cross the labeling boundary with ease: "I was an alcoholic from the first drink." Others cross it with great difficulty: "You never would have known I was an alcoholic, I hid it so well."

If we step inside the treatment process, we see that disclosing information about yourself to people who care about you, or who are trained to respond in helpful ways to solve your problems, is a key psychosocial process. It is a process that has probably kept many individuals and possibly some societies relatively free of serious mental health problems (Naroll in press). In certain societies there is an openness about ingroup behavior; problems are aired and adjustments are made accordingly. In other societies problems are rarely aired and few adjustments or changes are made.

Self-disclosure is a fundamental trait that is constantly reinforced in Alcoholics Anonymous. In AA, people disclose a great deal of information about their drinking behavior (Pletcher 1979). AA helps people stay sober through the combination of regular group meetings, its organizing principles, and the peer pressure surrounding stories about recovery. AA is an example of a voluntary social network where self-disclosure is highly rewarded and where the denial of drinking problems is not. People in AA know whether or not a person in the group has a drinking problem. They control the definition of the problem(s) largely through sharing their own experiences. As sobriety experts, they set the context. The meetings are highly patterned, although in other respects every meeting is unique. There is a close relationship between the conception of the drinking problem by the group and by the drinker who comes to the meeting. Also, the general public has a clear conception of what AA groups are all about. The drinker, the AA group, and society reinforce the idea of sobriety. This is not to say the solution is perfect. Not all persons who use AA to stay sober are sober. And AA makes no claim about its successes in this regard. But AA is a relevant recovery and aftercare model for people with drinking problems.

For many, AA has provided a behavioral process to which they can relate in their effort to continue living. The social and cultural principles of ritual, belief, organization, and regularity found in AA have great potential for helping solve other social problems. Some social networks are naturally open while some are closed. People in the more closed social systems are less likely to benefit from self-help groups than those in social systems where self-disclosure is more easily handled. People in closed systems are likely to require a more highly structured program for recovering from their problems. For example, they may depend more on traditional medicine or formal Westernized medicine with diagnosis and therapy in the hands of a power figure in a higher status position (Barth 1969; Brigham 1971; Ehrlich 1973; Eidheim 1969; Townsend 1978). Reliance on an authoritative curing system or highly structured belief and family system may help to explain the low rates of alcohol problems among Chinese, Jewish, Armenian, and Italian populations, for example. It may also explain the lack of success of culturally insensitive AA and similar approaches among some American Indian, black American, and Hispanic American populations. Some American Indian groups find self-disclosure nearly impossible. The social structure

cannot accommodate personal disclosures especially among nonkin (Laurie 1979; Waddell and Everett 1980; Westermeyer 1979). Family and kin relations may well be limiting factors, not only for American Indian AA groups but also for AA-based recovery among other ethnic minorities (Yellowthunder 1980). The strength of the AA movement and similar support groups among ethnic minorities is largely based upon the strong leadership of a few recovering alcoholics who forge self-help groups against great odds (King 1977; Savage 1980). We need to study how the successful ones make it.

The biggest problem in many ethnic minority communities is finding *any* support for a sober lifestyle. This is a general problem for recovering alcoholics (Pletcher 1979). And as anthropologist William Madsen pointed out (1979), it takes only one alcoholic who really wants to live—then he or she will find another and in time their whole social network will change. Individuals getting better means communities are getting better. The conversion to sober lifestyles takes on a revitalization movement profile (Sadler 1979; Wallace and Steen 1972). New and old elements continue to characterize the struggle for recovery among each of the ethnic groups discussed elsewhere in this volume. (See also: Batson and Marz 1979; Harding and Zinberg 1977; Harper 1976; Heath and Cooper 1981; Paine 1977; Tamminen et al. 1980; Trotter and Chavira 1977.)

Summary

We have seen that the firewater myth is a mistaken exaggeration of facts about biological and cultural realities regarding alcohol use in different populations. It can be a useful heuristic device, and it probably still helps the uninformed to set up drinking-related conceptual boundaries. We have also looked at the operating metaphors by which many Americans think about alcoholism. The drunkenness-as-disease model has replaced the drunkenness-as-moral-wrong model. But we are beginning to see parts of the disease model break down. Some people, for example, are moving back to selected aspects of the moral-wrong model. For these persons and groups, drinking problems are due in part to inadequacies in a drinker's moral and social networks. Context studies have shown that a person's social network helps him or her make judgments about appropriate behavior. For the problem drinker and the alcoholic, the social forces, for a number of reasons, fail to provide a sufficient moderating influence.

It has been theorized here that a qualitative decrease in the emotional content of the drinker's social network and a decrease in the size of the network contribute significantly to changes for the worse. These changes are the first order of business for the therapist or the problem drinker to repair or rebuild using new social linkages in the

community. These qualities vary among ethnic groups and therefore require special understanding by the general population.

Members of special populations have additional burdens of a contextual nature. These people must be adept at crossing many cultural boundaries. They must deal effectively with their self-image. This can help them become part of a sober social network even in a high-risk drinking scene. Their sober self-image must also square with their ethnic identity. Associating with traditional values heightens their chance of success in bridging this gap. They must also deal creatively with their place in the dominant Anglo culture. Depending on the collective perceptions of the Anglo culture with respect to a given minority lifestyle, there will be diffusion of behaviors and attitudes. These may well be accepted as new features of the 100 percent American culture (Linton 1954). But to get there we need more native researchers trained to describe and analyze biological and cultural relationships in drinking and drunkenness settings.

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Chapter 11

Alcoholism and the Native American—A Review of the Literature

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Abstract

Although alcohol abuse among Native Americans (American Indians and Native Alaskans) is well documented, it is very surprising that little of that documentation is either sound or substantive. To develop any sort of fundamental understanding of drinking patterns among Native Americans, the unique relationship between the Native American and the Federal Government is examined. Literature on the causes of alcoholism and problem drinking among this population is reviewed. The incidence and prevalence of alcohol usage is described, and a critical discussion of treatment and future trends is presented. A brief discussion of alcohol problems among Native Alaskans is also presented. It is concluded that the American Indian and Native Alaskan continue to be caught in a search for identity and renewed pride and are entering a tumultuous transition period; social problems encountered by this population must be addressed before substantial progress can be accomplished in changing their drinking patterns.

Introduction

Although alcohol abuse among Native Americans (American Indians and Native Alaskans) is "well documented," it is very surprising that little of that documentation is either sound or substantive. Theories run the gamut from stress associated with acculturation to a genetic predisposition to alcoholism—and even take an amazing step further to mass suicidal tendencies (Klausner et al. 1979). Much of this literature is based on arrest records, suicide rates, and inadequate or inappropriate treatment records. What it amounts to is that we really know very little about alcohol abuse among Native Americans.

To develop any sort of fundamental understanding of drinking patterns among Native Americans, we must look at the unique relationship between the Native American and the Federal Government. This relationship, based on historical events, places the Federal

Government in the position of guardian of the Native American population (Supreme Court decision of Mancari *v.* Morton 1974).

Because of this unique relationship with the Federal Government, paralleled by citizenship in the general population, Native Americans are in a unique position to choose between benefiting from special programs because of their status as Indians or from general programs because they have the same rights as all other people in the Nation (Leatham 1978). Despite this position, an apparent widespread lack of awareness hampers development of effective services, policies, and practices needed to alleviate the deprivation suffered by this population.

Drunkenness has been a very prominent characteristic in the American public's image of the Native American since colonial times. Indians have a higher crime rate than any other ethnic group in (Stewart 1964). The following statistics were reported by the U.S. Center for Studies of Crime and Delinquency (1973): "The suicide rate among American Indians is twice that of the general population in the United States. About 75 to 80% of all suicides among Indians are alcohol-related. Alcohol also plays an important part in homicides among Indians."

The death rate from alcoholism among American Indians and Alaskan Natives increased from 8.9 in 1966 to 11.9 per 100,000 in 1969, compared with 1.6 and 2.0 per 100,000 in the general U.S. population for the same years. Deaths from alcoholic psychoses among Indians were 8.0 and 1.0 per 100,000 in those years, compared with 0.3 each year in the general population. And death rates from liver cirrhosis with mention of alcoholism were 20.7 and 26.3 among Indians compared with 4.8 and 5.2 in the general population. The male to female ratio of discharges from Indian Health Services and contract hospitals in one year after treatment for alcohol intoxication and liver cirrhosis with alcoholism were 2.5 and 0.78. In one Indian community during one year, 80 percent of the automobile accidents, 31 percent of the accidental injuries, 94 percent of fights involving injury, and all suicide attempts were related to drinking.

Despite such facts and figures on the subject of Native Americans and alcohol abuse, there continues to be much controversy concerning (1) how much drinking is done, (2) why this group drinks, (3) what are the causes of alcoholism, (4) what are effective treatment modalities, and (5) what alcohol prevention strategies will work with this group.

The purpose of this paper is to provide a review of current literature on Native Americans and alcoholism. The available literature spans a variety of disciplines and professional perspectives. Therefore, terms like alcoholism, alcohol addiction, and heavy drinking are used differently in the articles cited. This paper will attempt to simplify and standardize the language; however, discrepancies indicate the state of confusion apparent in the literature. For the purposes of this paper alcoholism is defined as an addictive illness as distinguished from more general terms relating to the frequent or excessive use of alcohol.

In reviewing the literature there is an implicit assumption that drinking is a disruptive element in Indian society. However, there is no statistically reliable information on the prevalence of alcoholism or excessive drinking within the Indian culture. The existing data come from police arrest records for Indians. Additional information is difficult to gather for two reasons: logistical difficulties in identifying and accessing data and problems in defining the meaning of alcohol abuse cross-culturally.

There is also conflicting information about the causes of drinking among Native Americans. For example, suggested causes range from personal psychopathological disorders to a theory of Indian genetic susceptibility to alcohol. Further, no agreement exists on treatment modalities, with approaches spanning the spectrum from Western psychotherapeutic techniques to the use of Indian religious ceremonies. Available information does indicate a relatively high proportion of heavy alcohol use among Indians. Caution is necessary in interpreting the data because the studies are subject to problems of validity and reliability and may suffer from widespread misconceptions, stereotypes, and biases that pervade the subject of Indians and alcohol.

An additional point concerning research methods is in order. Most of the literature reviewed for this report used participant observation as the field survey technique. This technique is limited by several factors: (1) the questions asked may not be appropriate for the specific group being observed, especially in cross-cultural situations; (2) the rapport on which the interviewer depends is rarely established, nor is there sufficient trust for people to answer questions truthfully; (3) the observer will reflect only the accuracies or inaccuracies perceived by his or her observation.

This paper reviews the literature on the causes of alcoholism and problem drinking in Native Americans. It describes the incidence and prevalence of alcohol usage in this population and presents a critical discussion of treatment and future trends. Also included is a brief discussion of alcohol problems among Native Alaskans, a subpopulation of Native Americans.

Causes of Alcoholism

A frequent question in the professional literature is "Why do Indian people drink?" Answers to the question include theoretical knowledge concerning psychodynamic factors and beliefs that Indians are genetically different from whites, indicating physiological reasons for alcohol problems.

Historical

The available literature frequently discusses historical aspects in examining causal factors. Many sociologists theorize that alcohol was

unknown to the Indians until it was introduced by the Europeans. Since the Indian society was unprepared for dealing with alcohol and the resulting intoxication, its consequences were devastating (Heath 1964; Winkler 1968; Wissler 1940).

Many of the writers felt that it was significant that there were no tribal laws (and are none now) to punish a person who committed a crime while intoxicated (Peckham 1947). Throughout the literature Indians appear to be indicted for excusing certain destructive behavior when under the influence of alcohol. The Indian Health Service Task Force (1969) states: "This uncertainty regarding how the community should react to drunkenness is a key historical point which is relevant to contemporary attitudes."

Psychocultural

It is important, although difficult, to investigate psychocultural factors that predispose Indians to drinking. Some writers view drinking patterns among Indians as symptoms of underlying psychological and sociological problems. For example, Louise Jilet-Aall (1974) identified six types of alcohol use by American Indians. First, alcohol was used to have fun, and the "high" from alcohol was incorporated into Indian festivities. Second, alcohol was used to show generosity in the form of "give-aways" at drinking parties. These parties were held around payday when family and friends were drunk for days and drank an astounding amount of alcohol. Third, it was used to gain spiritual power; because alcohol delirium incorporated wild and uncontrollable behavior it was looked upon as a sign that the drinker was in contact with the supernatural. In addition, alcohol gave Indians the feeling of power that they lacked when dealing with mainstream society. Fourth, Indians drank to be like the white man; however, the hostilities that Indians harbored toward the white man came to the forefront. At times liquor helped relieve tension between Indians and whites. Fifth, Indians drank to spite the white man. And sixth, they drank to escape reality.

Westermeyer (1972) suggested that "Indian drinking" (a shared pattern of drinking to the loss of control) allows the Chippewa to behave in ways that are acceptable and at the same time to assert their "Indianness."

Of all the drinking patterns of the American Indian culture the most reported is the social drinking group. The literature indicated that there is intense pressure to participate and to drink heavily in drinking groups (Du Toit 1964; Ferguson 1970; Graves 1967; Lurie 1972). Price (1975) further elucidated this point by stating that "there are some positive functions of drinking for the American Indians. One is to share with each other, and two, to experience intoxication as a supernatural experience which has meaning similar to important dream experiences and three, drunkenness has some usefulness in overcoming reserve in personal relationships."

In regard to psychosocial factors, "Red Rage" is a common thread. Indians who drink excessively seem to be dealing with anger, frustration, worthlessness, and helplessness derived from a lack of autonomy and control over their own lives.

In conclusion, there appear to be two main sociocultural reasons for drinking: mourning the loss of a historical tradition and reacting to the stresses of acculturation, including the demand to integrate and identify with mainstream society. The American Indian personified the product of a variety of historical and cultural factors screened through an individual personal psychology.

The hypothesis that Indians have a genetic weakness for alcohol usually comes from lay persons but is given credence in the literature and therefore deserves mention. One such theory was set forth by Light (1973). She stated that poor diet has been related to alcoholism, and consequently it was the Indian's diet that led to alcoholism. This was further supported by an article by McLeod and Clark (1974) entitled "It's in the Blood." They stated that "many of the Native American people of this country live in highly stressful environments of change and adaption which set up physiological and emotional change disorders. Their diet is poor and low blood sugar is common, as is the subsequent craving for food items such as alcohol. It follows then that reduction of stress in their daily life combined with attention to dietary problems would greatly reduce the unfortunate connection between the Native people and alcohol abuse." In another article, McGunigle (1973) stated that "the chronic alcoholism in many American Indians may be a cerebral/allergenic/addictive response which should be identified. This condition is amenable to change through diet changes and behavioral therapy."

Further controversy was reported by Fenna et al. (1971), who stated that Indians metabolize alcohol at a significantly slower rate than whites. However, this was rejected by another study (Bennion 1976), which revealed no differences in alcohol metabolism between American Indians and whites. Similarly, no differences between Indians and whites could be discerned in the studies of liver alcohol. Bennion concluded that despite the foregoing discussion the question of ethnic differences and ethanol tolerance has not been answered completely.

It should be noted that presently American Indians are largely a social entity rather than a biological group. A large proportion of the Indian population is part Negroid and/or part Caucasian. However, the advantages of being members of legally recognized tribes and enrolled on reservations are so great that individuals who can qualify for tribal affiliation usually have themselves enrolled. The importance of recognizing Indians as primarily a social entity rather than a biological unit is important in dispelling the idea that Indian drinking is genetic.

One area neglected in the journals is what Indians themselves believe to be the cause of excessive drinking. One has to look very carefully to find statements made by Indians concerning why they drink. *The Road to Wounded Knee* (Burnette and Kostner 1974) indicates that

Indians view drinking as an expression of defiance of prohibition. In other words, Indians who were constantly warned against drinking by the reservation commissioners drank as a form of defiance, proving themselves independent. Also, many young Indians grow up with the idea that to drink is to be Indian, and vice versa. The fact that most of the great chiefs of the past—Tecumseh, Crazy Horse, Sitting Bull—were opposed to liquor is not well publicized. A third reason for drinking proposed by Indians is boredom. In the days before reservations, Indians spent most of their time earning their livelihood and participating in religious ceremonies, dances, and warfare. On the reservation, where religious ceremonies and dance were forbidden by the Bureau of Indian Affairs, and with nothing to hunt and no place to work, boredom became a major problem. The Indians passed time by drinking. Cultural repression is another cause of drinking among Indians mentioned by Burnette and Kostner. Most Indian cultures taught people, especially men, to control their feelings and hide their emotions. Drinking became attractive, particularly after domination by white society, because it allowed people to express their feelings. Finally, Indians believed drinking is related to despair. This idea was best summed up by a Sioux man who said "when you have no job, no money, and a house with a dirt roof—you have reasons to want to get drunk."

Initially, the Indian was to make a good impression on his white counterpart and reveal the core complex—the emotionally charged cluster of sociocultural ideas resulting from his own and his forefathers' experience with the white man, generating hostility toward the white oppressor, anger about overt and covert discriminations; frustration because of identity conflicts; shame over the moral confusion of his people; despair over the disappearance of the Indian's way of life and over the white man's "firewater." All of these feelings are set in motion when Indians are asked why they drink and make it impossible to give a single answer. Two other suggestions are that Indians drink to prove that they are not white and that they drink with others to prove that they are accepted by them. Also it has been suggested that Indians drink to complete a self-fulfilling prophesy, i.e., "if you are going to call me a drunken Indian, I will be one."

Incidence and Prevalence

The literature, with exceptions to be discussed, is rooted in the implicit or the explicit assumption that alcohol has a disruptive effect on these American Indians and the integrity of their various cultures. It is not empirically known, however, how serious a problem alcohol poses for American Indians and their culture. Even accepting the notion that a relatively high percentage of American Indians use alcohol, there is still a paucity of information to evaluate whether or not the motivations for such behavior are pathological. The measurement of the patterns of

drinking, and extent of alcoholism in any population is difficult, even under the most favorable circumstances. The problems are compounded in dealing with the Indian population, however, because of the widespread misconceptions and biases and stereotypes surrounding Indians and alcohol. It is necessary, therefore, to be cautious in the interpretation of data.

In 1969, the Task Force on Alcoholism of the U.S. Indian Health Service concluded that (1) most Indians have tried alcohol by age 15, (2) heavily drinking males outnumber females by about 3 to 1, (3) drinking reaches its peak of greatest frequency between ages 25 and 44, (4) there is a marked decline in drinking after the age of 40, and (5) many Indians of all ages are abstainers. There are virtually no older Indians who drink excessively. (This statement is questioned by other studies.)

Another way of checking the statistics on Indians and drinking is to compare suicide rates. In his book *Indian Americans*, Wax (1971) stated that "in comparison of U.S. death rates in 1967 where causes of death that are related to drinking patterns were enumerated, the Indian rates were the following number of times greater than those of the general population for these causes of death: stomach ulcer and intestinal problems (gastritis), 3.8 percent; accidents, 3.2 percent; homicide, 2.9 percent; cirrhosis of the liver, 2.8 percent; and suicide, 1.6 percent."

Kunitz et al. (1971) also recognized this in their article "The Epidemiology of Alcoholic Cirrhosis in Two Southwestern Indian Tribes." It appears that the Navajo have a more active and visible drinking component and have a higher rate of violent death than the Hopi. However, liver cirrhosis and death rate among the Hopi Indians are over four times higher, but among the Navajo the age-adjusted rate is only slightly higher than that of the U.S. population. The article points out that when research is done on a tribal basis, different results may be found, with some tribes having lower rates of problem drinking. The Indian death rate from cirrhosis of the liver has been reported as being three times that of the U.S. population.

Another report published by the U.S. Department of Health, Education, and Welfare (1970), entitled "Alcoholism: A High Priority Health Problem," stated that "the prevalence of alcoholism among American Indians has been estimated to be at least two times that of the national average."

Criminal records have also been used to estimate the incidence of drinking among Indians. Hurt and Brown (1965) stated that the high rate of alcohol consumption among the Yankton Indians is reflected in a large number of crimes and misdemeanors. Thus, in the 5-year period before 1960, in an Indian population of about 250 individuals, there were 571 Indian arrests for public intoxication, with one individual being arrested 39 times. There were also 71 arrests for disturbing the peace, 27 for assault and battery, and 37 for reckless driving, nearly all resulting from intoxication.

However, another way of looking at these statistics must be considered. Schaefer (1973) indicated that the disparity between Indian and non-Indian arrests associated with the use of alcohol is greater in urban areas than in rural areas. Police-Indian encounters are more likely to revolve around liquor consumption in the city than in the country. Levy and Kunitz (1973) stated:

> In his study of Indian arrests Omar Stewart (1964) has suggested that Indian arrests are high and aggregate for high alcohol-related misdemeanors and for non-alcoholic misdemeanors and crime. A different picture is presented by a number of studies dealing with individual tribes. . . . Prohibition laws enforced on many reservations lead to arrest for possession of alcohol and bootlegging which are not found in many other areas of the nation. Indians are also prone to prejudicial arrest in many off-reservation areas as an Indian will be arrested for drunkenness more readily than a white person. Finally, there is a deviant style of drinking displayed by many Indians. In regard to this latter factor, it should be pointed out, that for off-reservation areas, even if there is no prejudicial practice, the meaning of these arrest rates is controversial.

Hurt and Brown (1965) alluded that high arrest rates occur in spite of marked reluctance by the local police to interfere with Indians' drinking unless they are making nuisances of themselves.

Surveys of Indian drinking have been of two types: those utilizing policy reporting of arrests and crimes and those administering designs to elicit information concerning drinking behavior and attitudes toward drinking.

Critical Discussion of Treatment

In regard to treatment, the literature reveals definite patterns which encompass four areas: (1) "nativistic endeavors," (2) conversion of Indians to evangelistic religions, (3) individually invented types of aids provided by psychotherapy and Alcoholics Anonymous (medical model), and (4) American Indian group-oriented programs.

Historically, "the problem of alcoholism arose with the breakdown of traditional Indian social and cultural life. It was a frustrating failure for order, organization and a meaningful, coherent, predictable existence which drove the Indian to engage in drunken foray" (Dozier 1964). During this transitional struggle to find an identity between traditional existence and a new set of values there were early attempts at developing a therapeutic modality to eradicate alcoholism. The attempt was to provide a new lifestyle to combat drunkenness. One example of such early attempts was the "new religion of Handsome Lake." The movement aimed to point out the evils of alcohol and eradicate drunkenness. A contemporary example which bears striking similarities

to early attempts at reducing alcohol addiction is the use of peyote while treating Indian alcoholics (Albaugh and Anderson 1973).

The second method, described little in the literature but frequently among the Indian people, is Christianity. There are many examples of the sudden creation of teetotalers under the influence of missionaries, ministers, and preachers (Dozier 1964). However, as Dozier succinctly stated: "Conversion of Indian drinkers to evangelistic-type Protestant religions follows a pattern similar to those of Native cults. Converts initially reject alcohol completely, but adherence to the religion is typically brief. Disappointment in either the religious beliefs or practices or some real or imagined social slight or rejection will bring about a return to former drinking habits."

The third method of treatment is the "medical model" which has as its characteristics: (1) the support of a large bureaucracy, (2) professional services (psychiatrists, social workers, etc.), (3) the sanction of the medical community, and (4) acceptance by white society (Indian Health Service 1969). Throughout the literature it is clear that these programs have access to the professional journals, making it difficult for new, innovative programs to be started without insurmountable obstacles. There is a cultural "bias" toward the medical model, even though it has been suggested that Indians who possess a different world view will not respond in a constructive manner. It appears that in some cases territorial imperative, job security, and professional concerns are reflected rather than a search for a more acceptable model which will be homogenous to the Indian culture. Alcoholics Anonymous is part of the medical model and is probably the most controversial treatment modality among the Indians, yet it is used frequently. It is suggested that AA is generally unsatisfactory for Indians whose views are markedly different from the mainstream population; however, Alcoholics Anonymous is helpful to highly acculturated Indians. Any kind of treatment which is not flexible enough to contain the unique cultural aspects of the Indians appears doomed to failure.

Perhaps the most promising methods (Baker 1973; Dudney 1973; Moore 1973; Neely 1975; Nowak 1972) include Indians in planning, implementing, and organizing their own programs on a community basis. This, however, may present a problem since the funding requirements are rigid, and when they are fulfilled there is frequently little room for creativity. Any Federal program must allow a great deal of flexibility. Therefore, the minimum recommendations include (1) making a concerted effort to include Indians on staff, (2) encouraging linkages with Indian organizations and medical programs, and (3) giving maximum participation in the program to Indians who are affected by them.

Alcohol Abuse Among Native Alaskans

A wide variety of factors affect the drinking practices of Native Alaskans, including climate, daylight hours, the forceful introduction of modern technology (post-World War II), and the dramatic urbanization, with new leisure time, that replaced a subsistence way of life (Knisley 1972). According to Knisley, to contend with these massive social and cultural changes, education, welfare services, and employment assistance have emerged in the larger communities. Knisley also noted that with the highest birthrate in the Nation—"comparable to that of India"—combined with disrupted social controls and family ties, land that progressively provides less and less natural sustenance, a need for manufactured goods and technical assistance that grows at a "disproportionately accelerated rate," social problems based on frustration, idleness, and impoverishment are found at crisis levels in at least 80 percent of the villages. For most, the only release from this stress is continual drunkenness.

The five major ethnic groups indigenous to Alaska (Northern Eskimos, Southern Eskimos, Athabascan Indians, Southeastern Indians, and Aleuts) can be characterized as having extended family ties, a general permissiveness toward children, a determination to retain the essence of cultural identify and values, and a sense of affinity to their natural environment. However, the subsistence way of life is no longer supported by the natural environment, team efforts are no longer necessary to succeed, overt social and civil controls are either illegal or impractical, and youth and young adults are contemptuous of civil/religous roles (Knisley 1972). Kraus (1977) noted that for "many Native Alaskans, and especially the young, the breakdown of the organized, consistent and traditional relationships due to the pressures from outside, has resulted in a reduced ability to find and hold a position of psychological integrity and centrality. Loneliness, anxiety, frustration, continuing stress, and at times, despair characterize the lives of many Native Americans today."

As a result, alcoholism and alcohol abuse appear to be rampant in Native Alaskan communities and are considered to be the No. 1 health problem. According to Mala (1979), "We have found that, Alaska Natives (who comprise only 17% of the state) account for these statewide statistics: 60% of the deaths due to alcoholism (over five times the non-Native rate); 67% of all client admissions to State-funded alcoholism programs; 25% of the deaths due to cirrhosis of the liver; 43% of all suicides; 38% of all homicides; 42% of all homicide arrests; 44% of all aggravated assault arrests; 31% of arrests for forcible rape; violent death rates almost greater than for non-Natives."

Despite the apparent high incidence of alcoholism and alcohol abuse in Native Alaskan communities, treatment facilities for individuals with these problems are extremely lacking. Miller et al. (1974) noted that recordkeeping in many facilities was very discouraging. Specifically, he

noted that the results of chart audits indicate that patients were assigned to treatment methods without a thorough evaluation of their problems and without a recorded assessment of the severity and that they were allowed to progress without followup or reassessment. Miller et al. (1975) noted in a survey of 10 Public Health Service hospitals and 2 locally managed hospitals that the medical system's response to 291 problem users of alcohol left a great deal to be desired. According to Miller, many of the problems again centered on faulty and inadequate information-gathering procedures. For example, he noted that on only 97 of the 291 charts was there enough information for the investigator to assess the severity of the problem, and on only 89 charts did the chartkeeper make such an assessment. Miller et al. (1975) also found that, in most cases, there was no attempt to either outline related problems or provide followup evaluation or followup treatment. The investigators found that despite the medical and social complexities of alcoholism, on only 56 of the 291 charts reviewed was any attempt made to outline related problems—social, economic, or psychological—that could influence the comprehensive care of an alcoholic. Also, for only 40 of the 274 patients with a treatment plan was there documentation of followup; for only 22 was there any attempt at followup to evaluate treatment outcome; and of the 22, a negative result was noted for 9. In none of these 9 cases, however, was an alternative treatment plan developed. In reviewing the charts, Miller et al. also found that approximately 7.5 percent of the client population was made up of nonalcoholics. According to Miller et al., part of this caseload came from local courts which viewed the alcoholism program as a good counseling resource and therefore also referred cases to it that were not alcoholic.

Miller et al. (1975) concluded that several components contributed to the serious deficiencies found in the health system's response to alcoholism and problem drinking. First, records indicated a failure to provide the basic components of care that are routinely expected in the treatment of other health problems. Second, alcoholism was viewed as a single entity rather than as a chronic illness with various levels of severity. Third, the complex nonmedical problems so important in the development of alcoholism and its treatment were identified only occasionally. Fourth, while clients and patients are treated for the problem, they frequently are not evaluated, and the treatment method may be determined by program needs, not by client needs. Fifth, the presence of alcoholism seems to put an individual not only at risk for the development of a variety of problems but also at high risk of entering a treatment setting that will fail to systematically deliver the service needed to either prevent progression or identify and treat current problems.

Future efforts in ameliorating the incidence of alcoholism and problem drinking among Native Alaskans should include increased awareness of Native Alaskans, their culture, and their general outlook on life, and a concerted and focused primary prevention program. Such a program should place much emphasis on values clarification,

developing a clear self-image and decisionmaking and social interaction skills, drug education, and parent effectiveness training. More research should be done to answer questions such as what are the problem-drinking incidences among youths, how and why do their drinking patterns differ from the adult population, what is the actual relationship between alcohol abuse and acculturation, and what are the effects of the dramatic urbanization in Alaska since World War II? In the community, more effort should be directed at developing programs that are holistic in nature and culture-specific. Community involvement in these programs should be stressed. On a programmatic level, there should be more stringent criteria for accreditation in treatment facilities. Finally, a long-term program that encourages communities to develop mores that govern the appropriate use of alcohol may go a long way toward community self-determination.

Conclusions

The American Indian and Native Alaskan continue to be caught in a search for identity and renewed pride and are entering a tumultuous transition period. These problems, coupled with very low health levels, poor housing, and other difficulties, appear to have made the Indian people more susceptible to a destructive use of alcohol. These social problems must be addressed before substantial progress can be made in changing their drinking patterns.

In regard to treatment there are some apparent weaknesses:

- The programs, as they now stand, deal with the Indian drinker long after drinking has become a serious problem. Therefore, very little prevention work has been done. Prevention could take several forms, such as offering alternatives to drinking patterns by strengthening community projects such as recreational opportunities, cultural heritage programs, and work programs; but these must be fashioned to the cultural aspect of the community. One must remember that there are more than 250 tribes and many more Indian communities; therefore, each community must be allowed to dictate its particular needs.
- Many treatment facilities reflect the programs of mainstream society. Prevention programs should be culturally related and emphasize the strengths of the Indian community instead of emphasizing pathology. In addition, programs, particularly in the planning stage, must involve the Indian people themselves to make sure that administrative guidelines are not based on non-Indian criteria and standards.
- Education in the health care services should be made available to Indian people. They could then blend the best of Western therapeutic modalities with a self-contained cultural knowledge

which would then hopefully help develop methods of treatment tailored to the needs of the Indian people.

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Chapter 12

American Indians, Urbanization, and Alcohol: A Developing Urban Indian Drinking Ethos*

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Abstract

Movement of signficant numbers of people from rural to urban areas is a cross-cultural correlate of 20th-century industrialization, and Native North Americans (Indians) are no exception to the economic push off tribal lands and pull into urban-industrialized complexes. In this chapter, research studies of the urbanization of American Indians are cited and discussed. The use of alcohol by Indians in urban environments as a copy strategy is described. Los Angeles (California) Indian drinking practice studies are summarized as exemplars of urban Indian alcohol abuse issues. An Indian versus national alcohol consumption profile is presented, and cultural and contextual influences on Indian drinking levels are discussed. Differences in drinking patterns between rural and urban Indians are briefly described. Recommendations for future research in the following areas associated with alcohol abuse among urban Indians are provided: (1) application of research findings; (2) the problem drinker in the family context; (3) drug and alcohol abuse among Indian youth; (4) Indian women and alcohol abuse; and (5) prevalence and etiology of cirrhosis of the liver and other alcohol-related illnesses among and across Indian populations. It is concluded that these areas need immediate attention by the social and biological scientists if culturally viable treatment modalities for the Indian alcohol abuser are to be developed.

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Introduction

Movement of significant numbers of people from rural to urban areas is a cross-cultural correlate of 20th-century industrialization. Major studies of this social process have been accomplished in such diverse societies as Morocco (Awad 1970), Egypt (Abu-Lughod 1961), Peru (Doughty 1970; Mangin 1970), South Africa (Bascom 1964; Mayer 1962; Mitchell 1969), India (Rowe 1965), Mexico (Foster 1965; Lewis 1965), and Argentina (Bonilla 1970).

Native North American societies are no exception to the economic push off tribal lands and pull into urban-industrial complexes. In the last 30 years, significant numbers of American Indians have migrated from rural and reservation settings to major cities such as Denver (Graves 1972; Snyder 1971), Albuquerque (Hodge 1969), Minneapolis (Drilling 1970), San Francisco (Ablon 1964; Bowman et al. 1975; Fuchs 1974), Chicago (Garbarino 1971), and Los Angeles (Bramstedt 1977; Burns et al. 1974; Fiske 1975; Price 1972; Weibel 1977). In 1970, more than 340,000 Indians were living in urban areas, more than double the 1960 figure of 146,000 (Burns et al. 1974). In fact, the 1970 U.S. Census figures demonstrate that 45 percent of the North American Indian population now reside in urban settings.

Families migrating from a subcultural minority within a larger society which has, for the last 200 years, exercised a Federal policy of colonialism, pacification, wardship, and relocation toward that subculture will, necessarily, have special problems distinct from those of a migrating family that is assimilated into the host society (Officer 1971).

To begin with, the Indian on a reservation enjoys a closer relationship with the Federal Government than do most other Americans. On many reservations Federal officials or federally funded agencies actually build and run schools, operate vocational training programs, provide scholarships, supply medical care and hospital services, help individuals find jobs, appraise lands, arrange leases, administer sales of minerals and timber, collect rentals, distribute landownerships, and supply general welfare assistance directly to Indian clients (Officer 1971).

When Indians leave the reservation, the so-called "community" services do not follow them to the city. In the city there are few Federal agencies that serve only Indian clients. Indians are usually eligible for help only if they are indigent. Finally, the character of services provided by State welfare institutions and public hospitals is different from that provided by the U.S. Public Health Service (Officer 1971). It is only in the past 10 years or so that Indians in urban places have petitioned funding sources at city, State, and Federal levels for resources to build and perpetuate a parallel system of urban social services run by and for Indians.

Migrating Native Americans, then, are structurally cut off from many of their habituated means of assistance (Bittker 1973). They have learned to develop new resource systems along innovative lines.

Snyder (1971) suggested that the migrant's initial reference group upon entrance into the city, the ethnic enclave, and the subsequent social cliques that the migrant joins, provide surrogate social and assistance structures in the city. These very often include the handful of so-called "Indian bars" which develop in most urban Indian communities (Gardner 1969; Price 1978; Weibel and Weisner 1980*b*).

According to Jorgensen (1971), Native Americans have lived in neocolonial settings without access to their own strategic resources and without direct access to the locus of power. Native Americans have an endemic poverty of skills and training in preparation for urban life. Economic necessity is the prime consideration in making the decision to leave the reservation (Snyder 1971; Weppner 1971). Those who trek to the city are, therefore, assumed to be ill-equipped to cope with the product which they have helped to build but from whose services and profits they have been systematically excluded. In the cities, they substitute their structural rural poverty for urban poverty (Jorgensen 1971). Many, therefore, slip into patterns of sporadic employment, extended periods of unemployment, dependence on welfare resources, and alcohol and drug abuse (Barter and Barter 1974).

Some of the early Native American rural-to-urban migrants have raised their families exclusively in the urban environment; their children represent a second generation of urban Native Americans. The changing values and ethnic self-identity of this urban population goes undocumented. Other Indian migrants have tended to use the urban center as an economic resource while still maintaining ties through intermittent residence in rural places of origin. Recurring rural-to-urban-to-rural migration and long-term urban residence by increasing numbers of Native Americans are two more focal issues of the urban Indian literature (Snyder 1968; Weibel 1977).

Other focal topics of the American Indian urbanization literature are cross-cultural variations in work habits (Matthews 1972), perceptions of well-being and satisfaction with urban life (Graves 1971), social reference groups (Snyder 1973), pan-Indianism (Ablon 1964), drinking cliques (Snyder 1971), and alcohol abuse as a response to the stresses of urban life (Burns et al. 1974; Ferguson 1972; Graves 1972; Hodge 1969; Kuttner and Lorincz 1967; Snyder 1971; Weibel and Weisner 1980*a, b, c*; White 1971).

Our knowledge of the process by which diverse North American tribal groups move from rural wardship to self-sufficiency in an urban environment, the problems encountered in that process, and the positive and negative (alcohol and drug abuse) problem-solving strategies by which adaptations are engendered continue to be of interest to urban anthropologists and sociologists.

The Urban Environment, Coping Strategies, Alcohol Abuse, and Indians

One of the more devastating coping strategies assumed to be an Indian response to the stresses of urban life is alcohol and, more recently, drug abuse (particularly among the young, second generation, urban Indians).

The high rate of alcohol consumption among both urban and rural North American Indians has long been recognized as a complex social problem and has been the focus of a number of major anthropological and sociological studies (Berreman 1956; Bunzel 1940; Curley 1967; Devereaux 1948; Graves 1967; Heath 1964; Honigmann and Honigmann 1945; Kemnitzer 1972; Kunitz 1970; Lemert 1954, 1958; Levy and Kunitz 1974; Topper 1972, 1974; Westermeyer 1972; Whittaker 1962). Local, State, and Federal Government interest in the problem has been evident from the earliest attempts to outlaw the sale of liquor to Indians to the more recent concern about statistics which illustrate that the proportion of Indians arrested for alcohol-related crimes is higher than for any other ethnic group in the Nation (Bramstedt 1973; Dozier 1966; Graves 1971; Mosher 1975; Stewart 1964).

Indian concern has been reflected in such widely diverse responses as the prohibition of liquor by various Indian tribal councils even after the repeal of restrictive Federal laws, and in the growth of nativistic and messianic movements strongly emphasizing the evils of drink, such as the ghost dance and the Native American Church (Dozier 1966; La Barre 1975; Terrell 1972). More recent responses to the problem of alcohol abuse in Indian communities include the development of Indian-run, State and federally funded recovery and halfway houses and detoxification programs in urban centers that have major concentrations of Native Americans (Burns et al. 1974; Ferguson 1968; Morris and Ebrahimi 1974; Snake et al. 1977; Weibel and Weisner 1980b).

Much of the concern over excessive drinking by Indian people is traceable to the sheer scope of the problem as well as to the relationship often observed between drinking and various other social problems. Graves' (1967) study of drinking patterns in a tri-ethnic community found that alcohol intake of the Indians was almost seven times that of Anglos and over three times that for persons of Spanish descent. Similar proportions of people judged to be heavy and/or problem drinkers were found in Los Angeles (Burns et al. 1974).

Although excessive drinking is often causally linked with poor home and job relations and contributes to major health problems in the Indian population, the most immediate area of conflict and stress is with the law (Schaefer 1973). Stewart (1964) found that, in 1960, 76 percent of all Indian arrests in the Nation were alcohol related. Bramstedt (1973), using Los Angeles Police Department data, found that 89.9 percent of all adult Indian arrests between 1952 and 1967 were for intoxication. FBI uniform crime statistics showed arrest rates for urban Indians to be over 40 times greater than for the Nation as a whole (38,461 vs. 936 per

100,000) (Stewart 1964). Reasons (1972) showed that 1968 alcohol arrest rates for rural and urban Indians were more than 20 times those of the general population. Graves (1971) calculated similar arrest rates for Indians in Denver. Indian drunk-driving convictions in Los Angeles County were seven times greater than the proportion of Indian drivers (Pollack 1969).

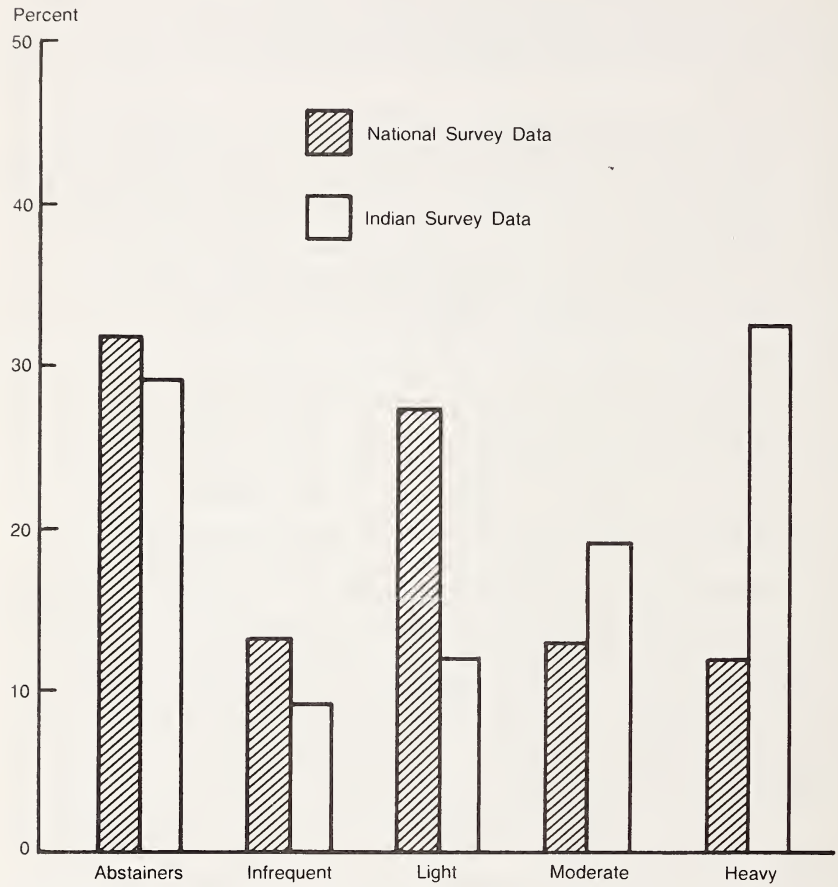
Graves (1972) and Garbarino (1971) point out, however, that the arrest rates, alone, are likely to provide gross overestimates of the extent of alcohol problems among Indians. Census undercounts of Indian populations in urban areas; the public nature of some forms of Indian drinking; the location of many Indians in poorer, more heavily policed neighborhoods; and alleged "police sweeps" of Indian bars all are factors that are likely to inflate Indian arrest statistics (Stratton 1973).

Accounts of urban Indian drinking include studies completed in Denver (Graves 1971), Chicago (Littman 1970), Gallup, N. M. (Trillin 1971), Minneapolis/St. Paul (Westermeyer 1972), Omaha (Kuttner and Lorincz 1967), Tucson (Waddell 1973), and Los Angeles (Burns et al. 1974; Weibel and Weisner 1980*a*,*b*,*c*). These studies indicate that alcohol use by urban Indians is similar to the drinking characteristics reported for reservation populations. Indians are overrepresented in arrest statistics for alcohol-related offenses in the city, and it appears that their use of alcohol continues to be a source of serious problems (Burns et al. 1974; Weibel and Weisner 1980*b*). Forty-four percent of men and 21 percent of women interviewed in the 1974 Los Angeles study said they have or have had a drinking problem (Burns et al. 1974).

Burns et al. (1974) undertook a major study of drinking behavior in the Los Angeles Indian community. The major thrust of the investigation was prevalence of drinking styles and alcohol abuse. The data clearly indicate that urban American Indians are heavy users of alcohol. One-third of the respondents were judged to be heavy drinkers as measured by a quantity-frequency-variability index developed by Cahalan et al. (1969). Eighteen percent were judged to be moderate drinkers, 20 percent were judged to be light or infrequent drinkers, and 29 percent of the sample were total abstainers (Burns et al. 1974). Compared with the national population, a smaller percentage of Indians are abstainers or light or infrequent drinkers, and a larger percentage are moderate and heavy drinkers (see figure 1).

Alcohol abuse is seen as a major social problem not only by Anglos and deliverers of alcoholism-related social services but also by the Los Angeles Indian community (Burns et al. 1974). Sixty-three percent of the sample cited alcohol as a main problem of Indians in Los Angeles. Forty-two percent ranked it as the number one problem. Forty-four percent of men and 21 percent of women interviewed in the 1974 Los Angeles study said that they have or have had a drinking problem (Burns et al. 1974). Similarly, Matthews (1972) and Price (1972) found

Figure 1. Percentage of All Respondents in Drinking Categories (Q-F-V) for National Survey and Survey of Urban Indians



Source: Reproduced from Burns, M.; Dailey, J.M.; and Moskowitz, H. Drinking Practices and Problems of Urban American Indians in Los Angeles. Part I: Study Description and Findings. Preliminary Report prepared under grant No. AA 00493 for the National Institute on Alcohol Abuse and Alcoholism. Santa Monica, CA: Planning and Research Institute, 1974.

drinking to be the most frequently identified problem of Indians living in urban centers.

Not only do Indians tend to be disproportionately heavy drinkers but they also exhibit behavioral characteristics when drinking distinct from those of the general drinking public. The following statements are frequently reported features of the urban Indian drinking ethos (Burns et al. 1974):

- Drinking is associated with social situations.
- There is little solitary drinking.
- Men very often drink in groups and pass the bottle.

- It is considered discourteous or even insulting to refuse the offer of a drink.
- The alcohol usually is drunk rapidly.
- Individuals drink to get drunk.
- Drinking often continues until the supply is exhausted or until a stuporous condition ensues.
- Since alcohol is shared in drinking groups, one does not necessarily need money in order to drink.
- In contrast to the quiet and reserved demeanor which is typical of the sober individual, loud and boisterous behavior occurs when drinking.
- Binge drinking is commonplace.
- Exaggerated symptoms of drunkenness are sometimes displayed.
- Overt aggressive and sexual behaviors are frequently associated with drinking.
- Alcohol was unknown prior to contact with whites.
- Though there sometimes is verbal disapproval, there are few social sanctions against drinking.
- There is little interference with, or open condemnation of, an individual's behavior when drinking.
- There appears to be little guilt associated with drinking.
- Men drink more frequently and more heavily than women.
- Alcohol addiction in the form of dependency does not appear to be as common as might be expected in view of extensive alcohol abuse.

This list of behavior traits indicates that drinking in the urban Indian community is a highly social phenomenon. Places and times of drinking, companions, and length of drinking episodes all reflect a socializing function. Drinking alone is rare (Kuttner and Lorincz 1967). The company of friends and relatives is important, and there is a sharing of whatever alcohol may be available. Drinking is a social lubricant. Not accepting a drink when offered would be considered rude. Drinking companions often tease those persons who reduce their alcohol consumption, try to get them to drink more, and eventually break off contact with them if they do not conform. Drinking is part of group membership and acceptance. Curley (1967) reported that among the Apache "it is the lone drinker who is violently and always rejected." Topper (1974) found that the Navajo definition for alcoholism has nothing to do with the frequency or amount of drinking; the alcoholic is defined as "an individual who drinks alone". "Show someone you are not a snob," "to be like other kids," "see who drinks more and how much," "everyone else does it," "I wanted to fit in," were frequent responses in the Burns et al. (1974) study. These drinking style characteristics are consistent in both urban and rural settings.

In contrast, Cahalan et al. (1969) reported a marked preference for drinking at home on a national level. Though Indian women tend to drink at home more than their male counterparts, the Indian men who were

heavy drinkers show a preference for friends' homes or bars, supporting the importance of the social function for males.

Weekends are the favored time for drinking. "Cruising," that is, traveling from one Indian bar or drinking place to another is a favorite activity. Cruising or making the rounds can be a Friday through Sunday drinking bout. Binge drinking (drinking steadily for more than 1 day) was reported by over half of the men but less than one-fourth of the women (Burns et al. 1974). It was something that just happened in the course of being sociable. Men would mention that such episodes were something they deliberately tried to do as part of celebrations and having fun (Hill 1978).

These findings of periods of prolonged intoxication are consistent with those of Topper (1972), who reported that binge drinking and missing work were fairly common for the young Navajo male. Over half of the men in the Burns et al. study (1974) reported that their heaviest drinking occurred in bars, many of which are so-called "Indian bars." The one-third who drank in streets and vacant lots were typically those who had to leave the reservation and travel to a nearby town to obtain alcohol.

Getting into Trouble. Periods of steady drinking may be acceptable within a rural Indian community. However, binge drinking, which may not be viewed in rural communities as deviant behavior by family and friends, is likely to lead to social and economic problems in an urban environment (Burns et al. 1974; Graves 1971; Weibel and Weisner 1980*b*).

In the Burns et al. study (1974), 69 percent of all the arrests recounted were alcohol related. Eighty-one percent of the arrestees were men. Two out of three men in the study had a history of arrests. Only one out of four women had an arrest record. These wide differences again suggest sex-linked differences in drinking behaviors.

Since frontier times, Indians have been characterized as acting-out drinkers for whom violence and aggression are commonplace (MacAndrews and Edgerton 1969). This behavior contrasts with the Indian's typically quiet, low-affect social demeanor when sober. Half of the men in Burns' study reported having been involved in fights when drinking. Only 20 of 1,359 men and women in a national survey reported that they had been in a fight when drinking (Cahalan et al. 1969). Navajo alcoholics reported that alcohol decreased their inhibition of anger, but this was not true of nonalcoholic Navajos (Savard 1968).

Although the majority of Indian families interviewed in the Burns et al. study saw alcoholism as a major problem, the attitude toward heavy drinking is still fairly tolerant. It is not certain that among Indians heavy drinking is defined as a problem in the same sense that it might be by the general population. The Weibel and Weisner study (1980*b*) found that indigenous definitions of problem drinking tend to be social rather than clinical in character. Although alcohol use is cited as the number one urban Indian health problem, there appears to be very little open censure of the drinker. Aggressive behavior seems to be accepted,

perhaps even expected of young men. Drunkenness is not considered a moral issue by many Indians (Burns et al. 1974).

Cultural and Contextual Influences on Drinking Levels

This profile of heavy drinking among urban Native Americans and the deviant behavior that accompanies it is not new information. However, all studies have identified a wide variation in Indian drinking patterns, including many abstainers and moderate drinking styles. Many studies point to an equally wide variation in drinking patterns among Indian tribal communities (Burns et al. 1974; Leland 1976*b*; Levy and Kunitz 1974; Price 1975; Stratton and Zeiner 1977; Weibel and Weisner 1980*a*,*b*,*c*). Contemporary ethnographic literature on Native Americans supports the assumption that cultural differences in Tribal America do persist in language use, ceremonial adherence, folk medicine, world view, and use of alcoholic beverages.

Levy and Kunitz (1974) suggest that loosely organized Native American societies in which vision quests and the use of hallucinogenic drugs are an integral part of spiritual belief systems and ceremony institutionalize the use of alcoholic beverages. In these societies, patterned behaviors of public drinking will not be negatively sanctioned and the desire to drink until psychic release is achieved will be the goal of drinking behavior (Mohatt 1972).

The Navajo and the Sioux are tribal groups that fit the cultural model outlined above. The very public, ecstatic character of Navajo and Sioux drinking, however, makes it deviant behavior in the Anglo urban milieu and subject to negative sanction by social control agents.

Levy and Kunitz (1974) also stated that, in highly structured societies, more negative sanctions are placed on drinking. It will be less public, more covert, and involve more feelings of guilt and shame about excessive drinking with the accompanying medical sequelae. The so-called "Five Civilized Tribes" from southeastern Oklahoma and Pueblo groups have been described as being the most highly organized tribal groups (Levy and Kunitz 1974; Price 1966; Weibel 1977). Drinking behaviors in these groups tend to include more nonpublic drinking and drunkenness, more in-home or private drinking, fewer alcohol-related arrests, and less involvement in urban treatment homes.

Burns et al. (1974) found that Sioux respondents drank more and were less likely to be abstainers than other tribal groups. The Navajo drank less than other tribal groups; the Navajo women, in particular, had a very high rate of abstinence (56 percent) and were least likely to be current or past heavy drinkers. The Oklahoma Indians also reported less heavy drinking than other tribal groups. These findings suggest an association between level of social organization and use of alcohol. The Weibel and Weisner study (1980*a*, *b*, *c*) supports these findings.

In the Weibel and Weisner study, participants in the Sioux and Plains Indian subsamples tended to fall at the extremes of the drinking level continuum. The skid row and the highly social, habitually heavy drinking

populations are disproportionately composed of Plains Indians. Nearly all of the Sioux and other Plains tradition participants who were abstainers at the time of the interview had been heavy users at one time. They now feel they must adhere to the Alcoholics Anonymous dictum of total abstinence in order to retain their sobriety.

Whittaker (1963) hypothesized that the high rate of drunkenness on the Standing Rock Sioux reservation is attributable to poor living conditions, the breakup of the Sioux culture, repressed aggression, and the lack of social sanctions against drinking. Maynard (1969) saw alcohol abuse among the Oglala Sioux as a means of dealing with acculturation. Kuttner and Lorincz (1967) felt that drinking among urbanized Sioux began early, was excessive, and was characterized by social drinking. The tradition of sharing a bottle with one's buddies served to maintain a steady supply of alcohol for the group. In contrast to the Whittaker findings, Kuttner and Lorincz (1967) felt that feelings of group inferiority, anxiety over subsistence, stress due to acculturation, hostility or submissiveness to white authority, and frustration of ambition were not strongly manifested; and therefore not motivations for drinking. Rather, the authors suggested that weakened family structures and the predisposition of the family to support and sustain drinking within its unit may cause alcohol and substance abuse among the Sioux in their sample.

The Stratton and Zeiner study (1973, 1977) of differential use of alcohol within the Oklahoma Indian population also illustrates the predominance of excessive drinking among Plains Indian groups. They found a statistically significant higher death rate from alcohol-related problems among the western Oklahoma Plains tradition Indians than among the eastern Oklahoma Indians. They suggested that profound social and historical differences between the two groups account for the differences in alcohol abuse sequelae.

The eastern tribes were primarily farmer-stockmen. The western tribes were the hunters of the plains. The eastern tribes came into contact with alcohol at least 100 years before the western tribes and also had had fermented drinks in the culture which were used ceremonially since before recorded history. They may, therefore, have had some cultural predisposition to use alcohol in more restricted and ritualized ways and have had longer to adapt the more secular use of alcoholic beverages into their own tradition or ceremonial use of intoxicants. The influence of the Fundamentalist Protestant churches and their prohibitionist stances among the eastern Oklahoma Indians are other factors that may account for the relatively rarer incidences of chronic alcoholism among the Five Tribes Indians in our sample (Weibel and Weisner 1980*a*, *b*, *c*). The disparity between percentage of Indian population and percentage of alcohol-related deaths is especially high for the western Oklahoma Cheyennes and Arapaho (they represent 1.9 percent of the Indian population but 20 percent of the alcohol-related deaths). Stratton and Zeiner (1977) argued that alcohol abuse in these tribal groups is associated with social disorganization and deculturation.

The Los Angeles Indian Drinking Practice Studies as Exemplars of Urban Indian Alcohol Abuse Issues

One of the more thoroughly researched urban Indian communities is in Los Angeles County (Bramstedt 1977; Burns et al. 1974; Fiske 1975; Matthews 1972; Price 1966; Weibel 1977; Weibel and Weisner 1980*a*, *b*, *c*). The U.S. Census data for 1970 indicated that 28,000 Native Americans live in the Los Angeles basin. Most Los Angeles Indian organizations consider this a gross undercount. Estimated figures for the Los Angeles Indian population in 1980 range from 40,000 to 100,000. Regardless of actual numbers, Native Americans currently living in Los Angeles constitute the largest concentration of urban Indians in the United States (Weibel 1977) and, in many ways, exemplify the national urban Indian profile.

The great majority of the Indians in Los Angeles are from other States and rural reservation areas. The explosion of the Los Angeles Indian population (as well as other urban Indian concentrations such as Phoenix, Chicago, Tulsa, and San Francisco) during the 15-year period from 1955 to 1970 was, in large part, the product of a federally sponsored program of Indian relocation which many students of Indian history feel was directly linked to the general Federal policy in the 1950s to "terminate" the reservation system and accelerate assimilation of Indians into Anglo society.

About the time Congress began to consider ways of implementing the "termination" of the Federal Government-Indian relationship the U.S. Bureau of Indian Affairs (BIA), independently, began a small "relocation" program on the Navajo and Hopi reservations. The program consisted of off-reservation job placement designed to relieve the pressure on reservation resources by encouraging Indians to resettle in urban-industrial communities (Officer 1971).

By 1956 the Federal Government was spending nearly one million dollars a year on relocation services for Indians. This level of Federal expenditure was to continue until the early 1970s. At that time it had become clear that the "relocation programs" were not having the hoped-for success in relieving reservation population pressures. Even after reorganization of the program in 1956 to emphasize placement of Indians in urban vocational training programs prior to a job search, BIA officials found that great numbers of "relocated" Indians did not remain in the selected urban environments, but, rather, made frequent extended trips back to their places of origin or simply returned to stay (Graves 1972).

More recently, the BIA has attempted alternative solutions to the chronic employment problems on reservations. Improved vocational training at the high school level, placement in higher educational institutions on or adjacent to reservations, and self-help programs initiated by Indians on reservations have stemmed the tide of federally assisted Indian migration to major urban centers. It is ironic to note that BIA field office in Los Angeles which facilitated the relocation process

will be closed this year. Relocation as Federal policy seems to have been terminated.

In the 25 years since the inception of the relocation program, more than 20,000 Native Americans migrated to Los Angeles with BIA assistance. At least an additional 20,000 Native Americans migrated to Los Angeles unassisted by Federal programs during that same period. Though there has been considerable mobility, enough people have remained in Los Angeles to have created a viable urban Indian subcommunity.

Population Density

The Los Angeles Indian population, like those of San Francisco (Ablon 1964), Denver (Snyder 1971), Minneapolis (Woods and Harkins 1968), Chicago (Lazewski 1976), Rapid City, S.D. (White 1971), and Albuquerque (Hodge 1969), is not distinguished by geographic parameters. Nowhere within Los Angeles County do the Indian residents represent more than three percent of the total population of any of the 81 politically separate incorporated cities.

There are, however, certain recognized areas of Indian concentration in Los Angeles. The Los Angeles Native American community can be thought of as a complex social network or interactional community comprised of four settlement concentrations and a widely dispersed majority connected by multiple communication linkages: family and social ties, voluntary associations, Indian self-help organizations, medical services, an urban Indian newspaper and newletters, and several institutions where Indians gather on a regular basis to conduct community business, socialize, and drink (Weibel 1977).

That Native Americans make up only 0.003 percent of the total population of Los Angeles is a factor in this ethnic group's limited ability to make itself heard politically, and to have its social needs translated into public service programs sensitive to its particular cultural perspectives.

Weibel (1977) hypothesized that the highly discrepant cultural heritages of the tribal groups in Los Angeles are the templates upon which predisposition for certain interactional and coping behaviors have been molded. The ways in which tradition-oriented tribesmen deal with a novel or large-scale environment will be qualitatively different from those strategies used by the more acculturated tribal members. Further, it has been hypothesized that these differences in coping strategies will be expressed by wide variations in alcohol use across tribes.

Though the general society tends to lump Indians into one cultural category, the tribal groups in most cities with large concentrations of Native Americans—of which Los Angeles is a prime example—are, in fact, as culturally and behaviorally diverse as Englishmen are from Saudi Arabians. The more than 100 tribal groups represented in Los Angeles (Price 1966) come from widely variant cultural subgroups in which consumption of alcohol has taken on differing cultural signifi-

cance and has resulted in differing drinking patterns. These drinking traditions (culturally determined attitudes about alcohol consumption) and related physiological and psychological symptomatologies are not ended by the migration to the urban environment. Rather, they are retained as values and behavior patterns, altered only by certain constraints of the urban milieu.

The Weibel and Weisner study (1980*b*) attempted to discover the institutional and personal self-regulation mechanisms that allow for varying drinking styles across and within tribal communities. The study focused on how urban Indian communities control their own drinking and the contexts within which a highly diverse drinking range occurs.

Although statistical reports conclusively point to the over-representation of alcohol consumption and alcohol-related illness and maladaptive behaviors in Indian societies, most Indians do not drink to excess and many totally abstain. Also, there are differential drinking patterns both between and within tribal groups. Why some individuals within the same social setting choose to drink and others do not is a research problem which must take into account not only cultural but also individual-psychological, social-structural, and physiological factors (Honigmann 1973; Leland 1976*a*; Weibel and Weisner 1980*b*). As Burns et al. (1974) suggested, "[It is] believed that alcohol consumption data are meaningful only in the context of the socioeconomic realities of both the Indian culture and the urban Indian community. The interactions and complexities of heritage, traditions, acculturation, deprivations, prejudices and numerous other variables must figure prominently in data interpretation." Ethnographic studies of contextual features in social settings contribute to a fuller understanding of the dynamics of Indian drinking patterns and their consequences in an urban setting.

Of equal importance and interest is the discovery of those indigenous social support systems and interactional strategies by which many Indian families moderate their drinking so that it remains a social lubricant rather than a maladaptive behavior in either the rural or urban setting. Those intraculturally developed social mechanisms that act as alternatives to, or sanctions against, excessive alcohol consumption could be of interest to social and medical service providers who deal with Indian alcoholism in the urban environment.

Finally, the identification of target populations for treatment, intervention, and prevention programs (people who are either self-defined or labeled by their ethnic community as "having a drinking problem") and the development of programs addressed to these target populations are a third potential use of ethnographic data on Indian drinking practices.

Making the Rounds, Not Messing Up, and Maintaining An Emerging Urban Indian Drinking Ethos

Culturally determined behaviors and attitudes about drinking learned in rural and reservation settings continue to be practiced in the urban milieu even after migration from tribal lands and tribal social settings.

How those practices and attitudes conflict with urban norms of social comportment, the extent of negative interaction with social control agents in the urban milieu, the consequences of those rule-breaking behaviors, and the development of an indigenous urban Indian drinking ethos designed to minimize the more obviously negative consequences of public intoxication are documented by Weibel and Weisner (1980*b*).

Environmental Constraints

Levels of drinking and accompanying behaviors among urban Indians are sensitive to and influenced by a number of socioecological factors. These dimensions include location (indoors or outdoors and rural vs. urban), the public vs. private nature of the event, the sacred vs. secular purpose of the gathering, the length or duration of the event (short-determined vs. long or undetermined), and the ethnic makeup of the event (all-Indian vs. predominantly white or other ethnic groups).

Individuated traits constitute a seventh dimensional constellation. This constellation, which has been labeled "boundedness," is a measure of the individual's rights of membership in the event. Features that influence event membership are tribal identity, level of traditionalism, socioeconomic status, and lifestyle. Membership rights affect both the individual's decision to participate in a given scene and his or her generalized behavior and drinking practices in that setting.

Events that are urban, sacred, indoors, public, of short duration, and include many non-Indians exhibit lower levels of drinking and aberrant subsequent behavior than do events that are rural, secular, outdoors, private, Indian, and not time bound. Further, Weibel and Weisner (1980*b*) found that individuals are sensitive to shifts in environmental dimensions and adjust their drinking styles and comportment accordingly. If a person's preferred drinking style is in contradiction to a setting's level of tolerance for drinking, attendance at that event is usually curtailed. Conversely, if a person's drinking style is consistent with a setting's level of tolerance for drinking, attendance at that event is predicted and the preferred drinking style will be exhibited. Both explicit and implicit rules about where, when, and how much drinking may occur in any given setting are widely acknowledged and observed among the Los Angeles Indian population. Even within settings in which drinking is sanctioned, certain areas are clearly nondrinking spaces. Participants in the settings who wish to imbibe are restricted to areas where drinking is permitted. Nondrinking space is strongly associated with spiritual-sacred space, while drinking space is associated with secular space.

Community leaders, event organizers, and individual community members can and do manipulate their social environments to control the level of alcohol consumption in those settings. Successful indigenously developed interventions include:

- Holding an event in a public, highly visible facility.
- Limiting the time frame in which an event takes place.
- Opening the event to the non-Indian public.

- Holding the event in an urban versus a rural area.
- Including sacred or spiritual elements in the events.
- Holding the event in an enclosed rather than an open space.
- Introducing internal control agents (security guards, program monitors, warnings about the ill effects of alcohol, explicit rules of conduct) into an activity.
- Excluding the sale of alcoholic beverages at the event.
- Providing community activities with foci which are nonconducive to drinking (e.g., the serious business of community action committees, program boards of directors).
- Limiting participation in an event to select groups by tribe or socioeconomic level.

Public activities central to the sense of belonging to an urban Indian community can be shaped so that excessive or problem drinking (levels of intoxication that produce aberrant behavior, public drunkenness, physical and verbal aggression, arrests for driving while under the influence, auto accidents, loss of job, and family disruptions) is minimized. Task-oriented institutions that provide much-needed social services to the urban Indian community offer alternative public arenas to the drinking settings. These activities include involvement in the various Indian centers, free clinics, alcohol recovery homes, the Los Angeles Indian Commission, and other community activities. These activities provide "serious business" events in which urban Indians can and do participate in culturally meaningful self-help programs and status-enhancing roles.

Individual Control Mechanisms

Through observation, informal conversations, and formal interview strategies Weibel and Weisner (1980*b*) documented mechanisms by which most Indians are able to monitor their own drinking behavior so that it does not become socially inappropriate or involve them in antisocial or destructive activities while in an urban drinking setting. Identified control mechanisms include the concept of "maintaining."

Socially approved Indian bar comportment is behavior that sustains the ongoing conviviality of the social setting but does not become so uninhibited that negative sanctions are placed on it. To achieve this goal, the drinkers adhere to the principle of "maintaining." To "maintain," one drinks continually and steadily. However, maintainers monitor their physical and consciousness states in such a way that their behavior continues to be socially acceptable and competent.

Maintaining appears to be an adaptation to the urban Indian drinking milieu. Native Americans are acutely aware of the negative stereotype of Indians' not being able to handle their liquor and the arbitrary nature with which the police enforce restrictions against public inebriation, particularly in the areas in which urban Indians congregate to drink. Thus those Indians who drink in public places have adopted maintaining as a precautionary measure. By maintaining, one avoids the risk of

police involvement and community censure. On a personal, social-interactional level, it allows the individual to continue to participate and augment the ongoing conviviality of the social setting in which it is appropriate to drink.

Other ways in which participants in the study said they managed their behavior while in a drinking setting include:

- Strict adherence to the "rules of the house."
- Drinking with trustworthy friends.
- Drinking in settings that are "safe," places frequented by nonproblem drinkers, or people of one's own socioeconomic status.
- Avoidance of volatile interracial or intertribal settings.
- Noninvolvement in incipient aggressive acts.
- Use of humor to defuse possible negative interactions.
- Minding one's own business.
- Avoidance of controversial issues.
- Observing the etiquette of male-female relationships in drinking settings.
- Adherence to the sharing and communal aspects of Indian drinking cliques.
- A sensitivity to public censure, gossip, and the "moccasin telegraph."
- Limiting the time one spends in the drinking setting.
- Arranging for safe, responsible transportation prior to the onset of drinking.

Most individuals who drink in "Indian drinking places" tend to observe these explicit and implicit rules of social drinking. Total disinhibition, so characteristic of rural Indian drinking cliques, is modified in the urban setting as a response to the constraints of population density and heterogeneity, job considerations, increased surveillance, and external controls. Persons who transgress these rules are considered by their peers as people who have a drinking problem.

Other factors found to be statistically significant influences on drinking levels are (1) sex (Indian men tend to drink more than Indian women, although there is wide intertribal variation, e.g., the Sioux women drink more than either the Navajo or the Five Civilized tribeswomen—Weibel and Weisner 1980*c*); (2) age (drinking levels off with increased age); (3) percentage of Indian blood (the 50 percent Indians—"halfbreeds"—in the Weibel and Weisner study were disproportionately among the heavy drinkers); and (4) level of drinking in the family of origin (Weibel and Weisner 1980*c*).

Indigenous Definitions of Problem Drinking Among Urban Indians

The bulk of research that attempts to operationally define alcoholism or problem drinking and from which most alcohol recovery treatment modalities are developed is based on findings within white, male middle class populations. What constitutes an operational definition of deviant

alcohol consumption in white middle class society may have little relevance for Indian populations whose cultural experience with the use of alcohol contrasts sharply with the middle class drinking ethos. Thus, programs designed to treat Indian populations specifically need to be informed of the way in which drinking behavior gets labeled "problem drinking" in their target populations and how the problem Indian drinker comes to (1) accept the label as "someone who has a drinking problem" and (2) seek help in dealing with an intolerable level of alcohol consumption (Topper 1975).

The Weibel and Weisner study (1980*a*) compiled a list of behaviors and attitudes indicative of problem drinking to members of the Indian community. Indigenously aberrant drinking behaviors include:

- Drinking heavily and overtly at urban pow wows.
- Drinking at the drum or dancing while intoxicated at an urban or rural pow wow.
- The regular appearance of community leaders drinking in low-status bars.
- Asking direct and personal questions while under the influence of alcohol.
- Drinking alone.
- Not eating during a drinking session.
- Drinking wine rather than beer or hard liquor.
- Drinking at serious business events (community meetings).
- Drinking in areas designated as sacred space.
- Making uninvited sexual overtures while under the influence of alcohol.
- Drinking while participating in athletic contests.
- Not being able to defend oneself in a fight because of one's level of intoxification.
- Not providing for the adequate financial support of one's family because of drinking costs.

This is not an exhaustive list of indigenous definitions, but, rather, a list of indicators of the cultural embeddedness of the concept-problem drinker. These indicators of problem drinking are essentially an index of socially aberrant behavior.

Some participants in the Weibel and Weisner study (1980*b*) offered other indicators of problem drinking that could be applicable to the general public (i.e., craving a drink, needing a drink to get going in the morning, drinking during the day, and not knowing when to stop). What seemed to be lacking in most peoples' understanding of abusive drinking was the physical effects of alcohol abuse on the human body. Few people interviewed voiced concern or knowledge about the association of alcohol abuse with cirrhosis of the liver, hypertension, ischemic heart disease, auto accidents, homicide, and suicide, even though the mortality rates among Indians for these alcohol-related phenomena are disproportionately higher than the national average (U.S. Bureau of the Census 1975). *Policy implications of these findings*

are that educational interventions might be considered to remedy this general lack of medical knowledge in Indian drinking populations.

Identification of indigenous definitions of problem drinking can also be a helpful tool to recovery program personnel who direct their efforts to the Indian problem drinker. The appreciation of alcoholism or problem drinking as a culturally relative concept may prepare alcoholism counselors to deal more empathetically with their clients and allows for a more meaningful exchange of experience and new knowledge. This information could be disseminated easily to the various Indian recovery programs and incorporated into their growing body of knowledge on Indian alcoholism and the special needs of the recovering Indian alcoholic.

Recommendations for Future Research on Alcohol Abuse Among Native North American Populations

Application of Research Findings

Of importance to urban Indian communities asked to participate in alcohol research is the applicability of the findings. Research that can lead to alternative prevention, mid-level intervention, and treatment modalities is better received than research with more esoteric and less obviously practical foci.

Indian participation in the planning, administration, execution, and monitoring of the research remains an important issue to Indian community leaders. The search for qualified Native American research personnel is suggested as well as the encouragement of research designs that include training components for Native American staff (Barter and Barter 1974; Bloom 1970; Wood 1976).

There is a real need to create a communications bridge between researcher, research findings, and the people who can make the most profitable use of that new knowledge, namely, Indian alcoholism recovery home directors, planners, and counseling staffs. New research designs should include some vehicle by which findings are disseminated to both participants and salient service delivery personnel.

The Problem Drinker in the Family Context

Alcoholism is a major factor in the disruption and fragmentation of Indian family life. Drinking in the home in the presence of children is common practice among drinking families (Kuttner and Lorincz 1967). Children in these families learn that drinking heavily and regularly is acceptable, expected adult behavior. It is integrated into their cultural ethos. How to treat the alcoholic Indian family is an unknown. Future research that addresses the Indian alcoholic in the context of his or her

family and community is needed if viable treatment modalities are to be established.

Drug and Alcohol Abuse Among Indian Youth

Although there is a growing body of literature on the effects of alcohol among Indian youth and the effects of alcohol abuse among the parents of Indian youth, Leland (1980) points to certain deficiencies in that body of information which persist to this day. Byler (1974) emphasized the enormous impact that a child's removal from the family unit has had in Indian society. Byler noted that alcohol abuse is one of the most frequently mentioned grounds for taking children from the home. The author discussed the reasons for the disintegration of the Indian family life and deplored the unskilled and ill-trained individuals who conduct social research on the reservation. Most studies that do focus upon the issue of Indian children and alcohol abuse deal with the effect of parents' alcohol abuse on the quality of life for the children growing up in alcohol-abusing homes. Ackerman (1971), for instance, pointed out that child neglect is not uncommon among children with alcoholic parents and accidents and the resultant trauma in the family are frequent. Ackerman also pointed to the disintegration of the family unit and traditional roles especially for men in contemporary Indian society and the resultant takeover of dominant roles in the family unit by the Indian women because of various socioeconomic factors in Indian society. The effect that these shifts in roles within the family have on the modeling process for the children is yet to be established.

Cockerham (1975), working among the Wind River Reservation youth, found that the children begin drinking by age 13 and that sexual differences in levels of drinking did not seem to be significant. Drinking alcohol was the most frequently cited source of trouble. Despite recognition of this source of trouble, 56 percent of the adolescents interviewed said they approved of drinking. Almost 92 percent reported that they had tried alcoholic beverages and 80 percent considered themselves to be regular drinkers. Drinking was primarily for enjoyment, to have fun with friends; and peer group influence appeared to be very strong in the initiation of drinking.

Everett (1972) worked among the White Mountain Apache in an intergenerational study of drinking patterns. Each generation was found to have a different perception of alcohol use. Intergenerational drinking patterns are distinctly different, with very little mixing of the groups. Therefore, intervention strategies that may work for mature Indians may not be applicable to Apache youth. Halloway (1966), working among Indian and Metis in Manitoba, Canada, found that abusive drinking among the youth in that area was severe and in need of immediate intervention. Mendelsohn and Richards (1973) worked among Alaskan Native adolescents. They described habitual drinking, school dropouts, and other factors that contribute to youths' problems of acculturation, identity crisis, and conflict between traditional and modern values. It is

assumed that alcohol abuse among the Alaskan adolescents was a mental health problem. Parmee (1968), in a study of formal education and culture change among modern Apache communities, mentioned that, during the summer months, 55 percent of all juvenile arrests on the reservation were for one charge: disorderly conduct, drunkenness, and disobedience.

Pinto (1973), in a paper delivered before the National Commission on Marijuana and Drug Abuse, discussed the growing crisis of alcohol and other drug abuse among Native American youth on reservations. It is assumed that the growing prevalence of drug and alcohol abuse among reservation youth is associated with lack of education, employment, and facilities and is correlated highly with growing rates of delinquency. Swanson (1971), in a study of severe alcohol abuse by 42 Indian children, 22 of whom were female, discussed the stated reasons for levels of drinking. The most common responses were boredom and the need for social acceptance. Similar findings among Navajo youth were recorded by Topper (1974).

Colgrove and Associates (1977) conducted a survey among Indian adolescents in the Hupa Vally in northern California. Adolescent drinking patterns similar to those previously described were found. Drinking begins early. Most Hupa Valley Indian youths are introduced to alcoholic beverages by the time they are 13 or 14. By the time they are juniors and seniors in high school, 60 to 70 percent of the Indian youth population drinks on a regular basis, with the weekends being the most regular drinking period.

The role of social drinking in the family as a social model was apparent from Swanson et al.'s (1971) work. Most children who went on to become alcoholics came from alcoholic homes. Problems within these alcohol-abusing adolescents ranged from early unwanted pregnancies to promiscuity and suicide. Weibel and Weisner (1980*c*) determined that there is a statistically significant relationship between high levels of drinking in the family of origin and alcohol abuse in later life.

Most of the Indian youth and alcohol literature is based on rural or reservation samples. Little is known about alcohol and other drug abuse among the second generation urban Indian youth, although drug abuse claims many young urban Indian lives each year.

Leland (1980) sums up the serious lack of proper research among Indian youth: there is a real need to look at the association between the children's attitudes and behaviors regarding alcohol and parents' consumption as well as to demonstrate the relationship between role modeling and consequent behavior.

Indian Women and Alcohol Abuse

The serious lack of information about American Indian women's This reviewer studied over 400 citations in an annotated bibliography of the Indian and alcohol literature compiled in 1977. No study in that

bibliography addressed the issue directly. Most demographic reports on Indian drinking include no data on females. The studies indicate poor sampling and lack of detail in the epidemiological data. This may be a bias in that researchers expect to find the problem of alcohol abuse in a certain subgroup (men). It is looked for and found in that subgroup to the exclusion of all other segments of the population—a self-fulfilling prophecy.

What little information we do have about alcohol abuse among Indian women is associated with issues such as the peculiarly high rate of fetal alcohol syndrome for Native American infants (Smith 1979; Streissguth 1978). Even more shocking is the finding that females account for almost half of the total cirrhosis deaths among Indians, compared with only about one-third of the deaths among each of two other racial groups. When age-matched populations are considered, it is clear that American Indian females have age-specific cirrhosis mortality rates much higher than any other group. The death rate for female Indians between the ages of 15 and 34 is 37 times the rate for white women (Malin et al. 1978). These phenomena need immediate investigation. The Malin et al. (1978) report called specifically for this research focus: "these differences suggest a phenomenon worth further investigation. The reasons for the striking differences in cirrhosis mortality [in Indian women] cannot be determined from these data, but a number of questions are suggested for future research."

Weibel and Weisner (1980*c*) determined that there are differential rates of alcohol abuse across tribal groups. The Five Tribes women and the Navajo women tend to be underrepresented in the heavy drinker categories. The majority of the women who are heavy-to-chronic drinkers, enter recovery homes systems, are a part of the skid row subcommunity in Los Angeles, and join men's drinking cliques are Sioux or other Plains Indians. We need to know more about the causes of the differential drinking rates across tribes in order to make rehabilitation procedures more sensitive to individual and tribal differences. The general lack of research on the drinking patterns and the prevalence of alcohol-related liver impairment in American Indian women (Malin et al. 1978) is deplorable and is an area that needs immediate exploration.

In a recent study of Indian women's drinking practices, Leland (1978) described the drinking behavior of women living in a Nevada Indian settlement and their techniques for coping with men's drinking. She found that although 35 percent of the women were directly affected by alcohol use, most women drink in the manner known indigenously as "being able to handle their liquor." Leland suggests that the indirect effects of alcohol (their men's drinking) greatly overshadow the direct ones and that the women's methods of coping with the men's alcohol use deserve more attention than they have received to date.

Leland (1980) sums up the areas in which research is still needed: "It is important to learn more about all effects of alcohol on children and on the lives of Indian women and children as well as the drinking and

coping patterns used by family members in dealing with the members who abuse alcohol."

Prevalence and Etiology of Cirrhosis of the Liver and Other Alcohol-Related Illnesses Among and Across Indian Populations

A survey of the research literature dealing with the legal, social, and medical sequelae of American Indian drinking practices reveals some staggering health statistics on the prevalence and effects of alcohol abuse among Native American populations.

The rate per 100,000 deaths attributed to cirrhosis of the liver in 1975 was 2.7 times higher for Native Americans than for the general population (Malin et al. 1978). Day (1976) reported similar findings in California. Between 1955 and 1971, deaths among Indians from cirrhosis of the liver increased 185 percent (U.S. Congressional Report 1974).

The prevalence and etiology of liver disease among Indian populations is further complicated by the suggestion in recent research that incidence of cirrhosis of the liver may differ across tribal groups (Kunitz et al. 1971). Further, while the existing mortality data indicate that alcoholic cirrhosis of the liver is a major contributor to Indian deaths, there is no clear evidence that alcohol abuse was the direct cause of the cirrhotic livers, particularly in the Indian women population.

There is some evidence in the literature that women and children of certain tribal groups in other parts of the world develop a variety of liver diseases after exposure to unknown or unsuspected toxins; for instance, an aflatoxin from mold on grains is associated with hepatocellular carcinoma (Rail 1968). These cirrhotogenic agents may cause liver diseases without the presence of abusive drinking. It might be simply that some Indian women in the preparation of their families' meals are exposing themselves to those agents. It would be extremely productive if we could identify a cirrhotogenic agent that is altering the metabolism of alcohol among these populations. This knowledge could lead to a greater understanding of what metabolite of alcohol is promoting the cirrhotic process which so afflicts our Native American population and other population groups.

The shocking rates of deaths by cirrhosis of the liver among Native Americans is just the tip of the iceberg. The involvement of alcohol in Indian deaths and the actual morbidity rates of cirrhosis of the liver in Indian populations are masked by the vagaries of the reporting procedures employed in the various States that have considerable Indian populations. For instance, while 382 deaths out of a national total of 6,182 Indian deaths in 1975 were attributed to cirrhosis of the liver, another 174 were attributed to a vague category entitled "alcoholism," 193 deaths were attributed to suicide predominantly by firearms, and 194 deaths were attributed to homicide, also predominantly by firearms.

By far, the largest number of Indian deaths in 1975 were attributed to accidents, predominantly automobile accidents (U.S. Bureau of the

Census 1975). People who have lived on Indian reservations or in Indian communities know from experience that deaths attributed to these causes very often are associated with high rates of alcohol consumption, long drinking histories, and very possibly major liver impairment which go undocumented as causes contributing to the fatality on death records and national health statistic data tapes.

It is also apparent from analysis of interview data that Indian definitions of alcoholism or alcohol abuse rarely include medical-biological criteria. More detailed information about the massive direct or indirect association of alcohol abuse and Indian mortality and morbidity rates may be one more prevention or intervention mechanism in the assault on alcohol abuse in Indian populations.

These five areas need immediate attention by social and biological scientists interested in applied research in special populations if culturally viable treatment modalities for the Indian alcohol abuser are to be developed.

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Chapter 13

Alcohol Use and Abuse Among the Hispanic American Population

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Abstract

This paper presents a brief but critical review and analysis of the literature on the use and abuse of alcohol by various Hispanic American populations. It delineates the current demographic data relevant to the social and economic characteristics of Hispanic Americans and notes the heterogeneity of this population group. It provides an overview of alcohol prevalence studies and notes the higher than average prevalence rate of the Hispanic American male reported consistently in the literature. It outlines and explicates several factors reported to significantly influence the use and abuse of alcohol among Hispanic Americans, among which are ethnic factors, cultural attitudes and beliefs, physiological predisposition, anomie, culture shock, poverty, minority group status, and stress in general. And it describes the existing prevention, treatment, and rehabilitation activities reported in the literature. Little is reported in the literature as to prevention, while the treatment and rehabilitation literature indicates that underutilization is a primary problem.

The paper concludes that the Hispanic American population in the United States is culturally, racially, and socially diverse; that the use and abuse of alcohol among this population is quite high as compared to the general population; that Hispanic Americans suffer physical and mental health problems as a result of their drinking behavior; that although the identification of causative factors is speculative, nevertheless several causative factors appear to have been identified or at least suspected; and that prevention-treatment-rehabilitation models for Hispanic Americans are often criticized for their unavailability, inappropriateness, and inadaptability.

The paper makes four major recommendations: (1) the funding of research for the determination of possible physiological factors; (2) the use of drunk driving diversion programs; (3) the development and use of community alcohol education programs for the Hispanic American population; and (4) the development and use of community health action programs to take advantage of the Hispanic American's strong attachment to his or her barrio (neighborhood or community).

Introduction

This paper presents a brief but critical review and analysis of the literature on the use and abuse of alcohol by various Hispanic American populations. Its major objectives are (1) to delineate the current demographic data relevant to social and economic characteristics of Hispanic Americans; (2) to provide an overview of the prevalence of alcohol use and abuse among Hispanic Americans; (3) to outline and explicate those variables that have been found to influence significantly the use and abuse of alcohol among Hispanic Americans; (4) to describe the existing prevention, treatment, and rehabilitation activities aimed at alleviating alcohol-related problems of Hispanic American populations; and (5) to summarize the literature and to pinpoint necessary policy actions that would effectively address the alcohol-related needs of Hispanic Americans.

The Hispanic American

The term *Hispanic American* is used here to designate those persons living in the United States who share a Hispanic cultural background. The term includes persons referred to in the literature as Chicanos, Cubanos, Puerto Ricans, Latinos, Hispanos, Latin Americans, Spanish Americans, Spanish surname, Mexican Americans, etc.

Hispanic Americans can be traced to North, Central, and South America as well as to Spain. Some are even indigenous to the United States, tracing their family histories to the Spanish landgrants of the Southwest. They may speak only English, only Spanish, or both English and Spanish. Their level of acculturation varies from unacculturated to acculturating to acculturated. Racially, Hispanic Americans may be Caucasian, Indian, *mestizo* (Caucasian and Indian), Negro, mulatto, or a mixture of all of these. They vary socioeconomically as well. It may be said, then, that the Hispanic American people are diverse!

A Description of the Hispanic American

A review of the literature on Hispanic Americans points up two significant facts. First, the number of Hispanic Americans is growing at a faster rate than the overall population. For example, the percentage of Hispanic Americans grew from 4.5 percent of the total population as reported in the 1970 census to 5.6 percent (or approximately 12 million) in 1978 (U.S. Bureau of the Census 1979). This fact implies that Hispanic Americans not only contribute a greater share to the tax base than before but also require a larger portion of health and welfare services. Second, Hispanic Americans are heterogeneous, with many different points of national origin. According to the U.S. Bureau of the Census (1979), 59.4 percent (or 7 million) of the Hispanic Americans

have migrated from Mexico (an increase of 57.8 percent over 1970). Mexican Americans are not only the largest subgroup of Hispanic Americans but also the fastest growing segment. Puerto Ricans account for 15.1 percent (almost 2 million); Cubans, 5.7 percent (about a half million); Central and South Americans, 7.2 percent (over three-quarter million); and persons of other Spanish origin, 12.6 percent (1.5 million).

Mexican Americans can be found in various urban centers and rural settings throughout the United States. However, most Mexican Americans live in five southwestern States (Arizona, California, Colorado, New Mexico, and Texas), with 30 percent of all Hispanic Americans living in California. A major portion of Puerto Ricans reside in New York (U.S. Bureau of the Census 1979). The remaining Hispanic Americans are scattered throughout the country.

The Hispanic American population figures published by the U.S. Bureau of the Census are often disputed by community groups who claim that the actual numbers are higher (e.g., "Mexican American Population Commission" 1974). The problem in data gathering lies in the diversity of Hispanic Americans; no single term can adequately encompass the various facets or subgroups or be used to arrive at an indisputable census figure.

The heterogeneity of Hispanic Americans affects the health and welfare services they receive. It seems logical to assume that one Hispanic American is able to communicate with another on the basis of their common culture. Consequently, due to the paucity of Hispanic American professionals, service providers are prone to recruit such professionals on the basis of their availability rather than the appropriateness of their training and intercultural sensitivity. As a result, some Hispanic American professionals find themselves providing services to clients or patients with whom they have little in common, (for example, a South American psychiatrist treating patients from a barrio in East Los Angeles).

Selected Demographic Characteristics

Hispanic Americans tend to be younger than the general population, with almost twice as many persons aged 17 or younger (37.4 percent vs. 19.1 percent for the general population). In contrast, the percentage of elderly Hispanic Americans (aged 65 and older) is smaller (4.3 percent vs. 10.5 percent). The only exception appears to be among Cubans who have more elderly than the general population (13.3 percent vs. 10.5 percent) (U.S. Bureau of the Census 1979).

Educationally, Hispanic Americans present a mixed picture, with Mexican Americans and Puerto Ricans reporting the least number of years of schooling (23.1 percent and 15 percent, respectively, with less than 5 years of schooling in the age 25 and older group compared with 3 percent for the general population). Cubans and "other Spanish origin" groups, on the other hand, reported more years of education,

with three times as many persons having 4 years of college or more. This appears to reflect the middle class background of recent Cuban immigrants as opposed to the rural-agricultural background of the Mexican and Puerto Rican immigrants. No Hispanic American subgroup, however, demonstrated an educational achievement level as high as that of the general U.S. population (U.S. Bureau of the Census 1979).

Hispanic Americans reported higher rates of unemployment than the general population. Hispanic American men particularly experienced higher rates of unemployment—9 percent compared with 6 percent for all men in the general population. The percentage of Hispanic Americans in higher paying jobs was substantially lower—only 8 percent in the professional-technical occupations compared with 16 percent for the general population.

Occupational differences were also evident within the Hispanic population. Fewer Mexican American men than Puerto Rican men were found in the service occupations than Puerto Ricans (12 percent vs. 20 percent); more Mexican Americans were found in farm labor (5 percent vs. 1 percent for all other Hispanic Americans) (U.S. Bureau of the Census 1979).

The Current Population Survey found significant differences in income between the Hispanic American population and the general population (U.S. Bureau of the Census 1979). In all categories, Hispanic Americans had lower incomes. For example, in 1977 the median income for all adults was $6,500, while for Hispanic Americans it was only $5,600. Among men, the difference was even more pronounced, with Hispanic American men having a median income of $7,800 compared with $10,300 for all other men. The survey clearly demonstrated that such income differences were correlated with educational achievement. Hispanic American men with 4 years of high school, for example, reported median incomes of $11,400.

Family Characteristics

The Current Population Survey of March 1978 also found that Hispanic American families were larger than non-Hispanic American families, with 31 percent having five or more members compared with 18 percent for all others. Hispanic families were also younger, with fewer persons over age 65 (U.S. Bureau of the Census 1979).

In March 1978, 85 percent of Hispanic American families were living in metropolitan areas, with one out of every two families residing in central cities. Differences were seen within the Hispanic American population: Mexican Americans were more likely than other Hispanic groups to live outside metropolitan areas. For example, 19 percent of Mexican Americans were found to be living in nonmetropolitan areas compared with 5 percent for Puerto Ricans and 3 percent for Cubans (U.S. Bureau of the Census 1979).

Just as individual income was generally lower for Hispanic Americans, family income also was lower compared with the general

population ($11,400 vs. $16,000). About 21 percent of Hispanic American families were below the government-established poverty level. Puerto Rican families had the highest percentage of families earning below $4,000 annually (16.1 percent). About 25 percent of all Hispanic American families with children under 18 years old were below the poverty level. Of these Hispanic American families living in poverty, 51 percent were headed by women with no husband present (U.S. Bureau of the Census 1979).

In a 1976 study of 600 households in East Los Angeles, East San Jose, and rural Fresno, 88 percent of the families interviewed were living below the government-established poverty level (Alcocer 1977*b*).

Prevalence of Alcohol Use and Abuse Among Hispanic Americans

The general impression of workers and writers in the field of alcoholism, as recorded in the literature, is that the Hispanic American uses and abuses alcohol to a greater extent than the general population. A number of writers mentioned high prevalence rates of alcohol-related problems among Hispanic Americans (Alcocer 1975, 1977*a*; Blum 1973; Engmann 1976; Garcia 1976; Hall et al. 1977; Press and Cone 1967; Ruiz et al. 1973; Saavedra and Mariategui 1970; Sanchez 1974; Trevino 1975). Actual research reported in the literature was somewhat limited but nevertheless confirmed this general impression. Research on the use and abuse of alcohol among Hispanic Americans appeared to be divided into two areas: (1) prevalence studies and (2) health and social outcomes studies.

Prevalence Studies

Prevalence studies are important because they can provide a factual basis for good social planning of community services. In the field of alcohol use and abuse, prevalence studies most often are based on self-reported information. Care should be taken with such information because the literature indicates that respondents tend to underreport their drinking behavior. An example of this is a study of the drinking rates of residents of Tucson, Ariz., which included Hispanic Americans, Anglos, and other ethnic groups (Williamson 1976). Among other things, the researchers counted the beer cans they found in the trash cans of their subjects (members of 1,200 households). These subjects were later asked how much beer they drank during the week. Although 86 percent of the subjects reported drinking no beer during the average week and none of the subjects admitted to drinking eight or more cans a week, the trash can search revealed that over 50 percent of the households consumed at least eight cans a week and that nine households consumed a case of beer every 3 1/2 days.

Alcocer (1977*b*) found similar results in his study of self-reported drinking patterns of Hispanic Americans. Mexican American women tended to report higher rates of drinking for their husbands than the husbands reported for themselves. Similarly, male respondents reported higher drinking rates for their relatives and friends than they did for themselves. The results of self-reported drinking patterns of Hispanic Americans may reveal a lesser degree of alcohol use and abuse than is actually occurring.

Most of the research reported in the literature compared Hispanic Americans with other ethnic or racial groups. For example, the Cahalan studies included Hispanic American subsamples (Cahalan 1974; Cahalan and Cisin 1975; Cahalan and Room 1972; Cahalan and Treiman 1976; Cahalan et al. 1969, 1976). Generally these studies showed that Hispanic American men had higher rates of heavy drinking, escape drinking, negative tangible consequences from drinking, and alcohol-related problems compared with the general population; while Hispanic American women, on the other hand, typically had higher rates of abstinence and lower than average rates of alcohol-related problems.

Similarly, Haberman and Sheinberg (1967) found more alcohol problems among their Puerto Rican subsample. Graves (1967) found that Mexican American men had the second highest rate of alcohol-related problems in a triethnic sample of Indians, Mexican Americans, and Anglos. Meadow and Stoker (1965) reported that Hispanic American patients displayed more severe "alcoholic" symptoms than Anglos in a State psychiatric hospital. Meyerson et al. (1975) asked a population of Anglos and Mexican Americans in Santa Cruz County, Calif., how many of their friends and acquaintances drank "quite a bit"; 51 percent of the Mexican American sample reported that "nearly all" or "more than half" did so compared with only 25 percent of the Anglo sample who responded. The author noted, however, that the Mexican Americans tended to interpret "quite a bit" more stringently than Anglos (e.g., one drink a day could be "quite a bit").

In contrast to these studies, Slesinger et al. (1977) found in their survey in Wisconsin that alcoholism appeared to be only a slightly greater problem among Hispanic Americans than the rest of the community. These researchers noted, as have many others, that alcohol-related problems were seldom reported for Hispanic American women.

Alcocer (1977*b*) in his study of drinking practices among Hispanic Americans in three California locales, found that a group of less acculturated urban Hispanic Americans (in East Los Angeles) had a lower number of self-reported heavy drinkers and a higher number of abstainers than Anglo respondents and respondents from a more acculturated urban setting (San Jose), and an unacculturated rural setting (Fresno).

In the survey research reviewed, Hispanic American women were most often reported to be abstainers. However, evidence indicates that traditional sanctions against women drinkers break down with increas-

ing acculturation. For example, Gilbert's study (1978) of Hispanic American women in three Spanish-speaking communities in California found a positive correlation between women's active participation in public drinking and degree of acculturation (as assessed by language, dress, and number of years in the United States). Alcocer (1977*b*) found that drinking rates increased for women in areas that demonstrated higher acculturation levels. Similarly, Maril and Zavaleta (1979) found that, although a small number of Hispanic American women drank, those that did drink were young or middle-aged married women who had more than the mean level of education. Hence, there is reason to believe that acculturating Hispanic American women are a population at risk for alcohol-related problems.

Alcohol use and abuse among Hispanic American youth have also been studied. The results are interesting because of the contrasts they demonstrate. For example, self-reported statistics showed that a sample of Hispanic American youths had a lower percentage of drinkers and a higher percentage of abstainers than a sample of Anglo youths (Sanchez-Dirks 1978). Among college students, Levy (1973) found that white students had higher rates of alcohol use than blacks, Orientals, or Hispanic Americans. Robles et al. (1979) found that Puerto Rican adolescents had lower overall alcohol consumption rates than white adolescents. Guinn and Hurley (1976) found that their predominantly Hispanic American sample of secondary school students reported using alcohol as often as the predominantly white student group (i.e., 64 percent). Hence, the question to be answered by research is, Why do Hispanic American youths, particularly males, change from being nonusers and nonabusers of alcohol into adults with higher rates of alcohol use and abuse than their Anglo counterparts?

The survey research reviewed above points to higher rates of alcohol use and abuse by all Hispanic Americans except Cuban Americans. This indicates that Cuban Americans either do not have problems with alcohol, have not been studied as a distinct population, or have been included under more general headings. Also, the reader should be cautioned that underreporting may be prevalent in the results of self-reported drinking patterns.

Health and Social Outcomes

A more precise account of the severity of alcohol problems among Hispanic Americans is evident in examining those health and social outcome indexes that pinpoint the effects of alcohol use and abuse by Hispanic Americans. For example, the literature reviewed contained studies that dealt with the occurrence of alcohol-related problems, such as mortality rates due to cirrhosis of the liver, public inebriate and drunk driving arrests, and drunk driving accidents.

The relationship between cirrhosis of the liver and drinking is suggested in the literature. The prevalence of alcohol abuse can be calculated from the death rates from cirrhosis of the liver by means of

the Jellinek formula (Jellinek 1960). It can be assumed that high death rates from cirrhosis of the liver indicate high alcohol abuse rates in a given population.

Several studies indicated that death rates from cirrhosis of the liver among Hispanic Americans were higher than for the general population. Moustafa and Weiss (1968) found this to be true among Mexican Americans in San Antonio, Tex.; Aviles-Roig (1973) found similar results among Puerto Ricans; and Edmandson (1975) demonstrated this result in his studies of autopsies performed at the University of Southern California-Los Angeles County Medical Center. Edmandson's results were particularly interesting. For 1970, he found that, among Mexican American men, cirrhosis of the liver accounted for 52 percent of all deaths, compared with 24 percent for Anglo men, 23 percent for Anglo women, 22 percent for black men, 21 percent for black women, and 20 percent for Mexican American women. Similarly, Engmann (1976) found high death rates from cirrhosis of the liver among Hispanic American men in statewide health reports for California.

Studies have reported higher arrest rates for public drunkenness and for drunk driving among Hispanic Americans than the general population (Engmann 1976; Hall et al. 1977; Haugen 1975; Kern County Department of Mental Health Services 1975; Los Angeles Police Department 1975; Welfare Planning Council 1970). The same types of arrests were also higher than average for Hispanic American youths (Elias 1973). However, Morales (1972) expressed the view that high arrest rates in Hispanic American neighborhoods are a product of overpolicing. If this allegation is true, then the arrest rates for public drunkenness and drunk driving must be reevaluated.

Accidents while driving under the influence of alcohol were also reported to be higher than average for Hispanic Americans (Hyman 1968; Hyman et al. 1972). Kaye (1977) found that alcohol was a common denominator in traffic fatalities in Puerto Rico. The author reported that one-half of the adult population drives after drinking, reflecting a general lack of concern about traffic safety.

If the studies reported above for death rates from cirrhosis of the liver, for public inebriates and drunk driving, and for accidents while drinking and driving are representative of the Hispanic American population, then it can be concluded that problem drinking is widespread throughout that community.

Causative and Contributory Factors

A clear understanding of causative and contributory factors is critical to insuring that policy and program strategies are designed to deal directly with those factors identified as leading to the use and abuse of alcohol by Hispanic Americans. Generally, it is assumed that if the causes of a problem are known, steps can be taken to either eliminate

or alleviate the problem. However, the problem of alcohol abuse and alcoholism has proved to be difficult in this regard. Specific causes have not been identified. It should not be surprising that the causes of Hispanic American use and abuse of alcohol also have not been well defined or even completely identified. Nevertheless, the literature implicated several factors causing or contributing to the high rates of alcohol use and abuse among Hispanic American populations. These factors are ethnic, cultural, and physiological in nature.

Ethnic Factors

Ethnic factors include those characteristics of the Hispanic peoples of North, Central, and South America that influence the drinking practices of Hispanic Americans in the United States. Generally, the literature indicated that alcohol use and abuse was high among the Hispanic people of the Americas. The drinking of alcoholic beverages was reported to be widespread among the preliterate and native societies of the Hispanic Americas. Differences were noted, however, between Indian and mestizo (mixed) populations, although both groups tended to show heavy drinking patterns. For example, Madsen and Madsen (1969) found that drinking was structured among the Nahuatl Indians (in Mexico) and thus became a ritual that strengthened social bonds. On the other hand, the authors noted that among the mestizos of Tepepan (also in Mexico) intoxication intensified feelings of hostility and frequently led to violent and deviant behavior. These observations were supported and confirmed by the work of Doughty (1971), Heath (1962), Holmberg (1971), Kearney (1970), and Lomnitz (1969). Narvaez (1973), reviewing the use of alcohol by pre-Hispanic people, asserted that, although brutal and primitive measures were used to control the use of alcohol, they were nonetheless effective and enabled the ancient Mexicans to maintain a stable civilization.

A number of contemporary Hispanic societies of Latin America are reported to have high rates of drinking problems (Negrete 1976; Puffer and Griffith 1967; Rivera-Lima 1973; Saavedra and Mariategui 1970). Horowitz et al. (1967) found a high incidence of alcohol-related problems in 10 Latin American countries. Bustamente (1974) noted that alcoholism was recognized as a national health problem in Mexico as early as the second half of the 19th century and that it has continued to be a serious problem to this day. De la Fuente and Campillo-Serrano (1977) corroborated Bustamente's comments; they found that alcoholism was still a serious health problem in Mexico, with the death rate from cirrhosis of the liver at a constant 20/100,000 over the last 10 years. The authors noted that cirrhosis mortality was the primary cause of death among Mexican males between the ages of 40 and 59.

These findings indicate that some relationship may exist between the cultural background of the Hispanic American and use and abuse of alcohol. However, the literature does not indicate the nature of the relationship, its true effect, or what may be done to counteract it. More

research is needed in this area, and caution should be observed to avoid simplistic conclusions.

Culturally Defined Attitudes and Belief Systems

The Hispanic culture places positive sanctions on male drinking and negative sanctions on female drinking (Maril and Zavaleta 1979; Paine 1977). As a consequence, their drinking patterns are such that Hispanic American men have a greater tendency to be heavy drinkers than the general population while Hispanic American women tend to abstain from drinking in greater numbers than other women (Alcocer 1977*b*; Cahalan 1970, 1974; Cahalan and Treiman 1976; Cahalan et al. 1969; Engmann 1976; Haberman 1970; Jacobs 1975; Jessor et al. 1968; Kessler and Rosario 1975; Meyerson et al. 1975).

Perhaps the most common perception found in the literature concerning the drinking of Hispanic American men was best expressed by Madsen (1964*b*), who, in his study of Mexican Americans in South Texas, reported that weakness in drinking ability was always humiliating to a man because a true man drank frequently and in quantity. Hence, an inability to maintain dignity when drinking was, for the Mexican American man, absolute proof of weakness, as was the refusal to drink. Madsen (1964*a*) pointed out that the Hispanic culture expects men to drink and to be able to hold their liquor. The author noted, however, that limitations on drinking and getting drunk were imposed by the importance that the Hispanic culture placed on dignity, honor, and responsibility.

The literature often mentioned the concept of *machismo* (manliness) as an attitude that encourages drinking among Hispanic American men through its implication that it is manly to drink (Abad 1974; Aviles-Roig 1973; de Rios and Feldman 1975; Stevens 1973; Trevino 1975). However, the concept of *machismo* was not clearly defined in the literature and its relationship to alcohol use and abuse remains unclear.

The literature also suggested that Hispanic Americans as a group have a greater tolerance of drinking behavior and drinking problems than the general population (Aviles-Roig 1973; Johnson and Matre 1976; Kessler and Rosario 1975). Meyerson et al. (1975) found that the Hispanic American viewed alcohol abuse not as a disease but as a moral weakness and as a result of social conditions. De Rios and Feldman (1977) found that Hispanic Americans believed that addictive drinking represented the lack of free will. These views have implications for treatment and rehabilitation.

Not only does culture specify that men should drink but it also appears to indicate where men should drink. Taverns and bars were identified as the usual drinking sites for Hispanic American men, and such sites were often perceived as a "man's place" (de Rios and Feldman 1975; Dobkin-de Rios 1979; Shannon and Shannon 1973).

Physiological Factors

There was some evidence in the literature that the use and abuse of alcohol may be related to observed differences in drug response among racial and ethnic groups (Zeiner and Paredes 1977). However, Schaefer (1977) was critical of the first generation of ethanol metabolism studies for their unevenness in design and the tenuous comparisons that can be made from them. Schaefer outlined a more systematic second generation of studies. He argued that ethanol metabolism studies, sensitivity reaction studies, biochemical studies of the dopaminergic system, and large-family genetic marker studies needed to be integrated with cultural stress studies before conclusions would be drawn about differences in alcohol response. Zeiner et al. (1978) tentatively identified culture and lifestyle as being related to the low incidence of alcoholism among the Tarahumara Indians (in Mexico).

Other Factors

The literature has indicated a number of other factors as being related to the high incidence of alcohol use and abuse among the Hispanic American population. Johnson (1975), in his study of Mexican Americans, suggested that alcohol-related problems may be due to anomie, but the evidence suggested that the concept of anomie must be adapted before it can be applied to the alcohol-drinking practices of Hispanic Americans. In a later study, Johnson and Matre (1978) found that anomie was ineffective in explaining variations in drinking habits in a Mexican American neighborhood.

The process of acculturation and the concomitant culture shock experienced by the Hispanic American in the Anglo culture were cited by some authors as causative factors in Hispanic American alcohol use and abuse (Alcocer 1975; Graves 1967; Madsen 1964*b*). However, Miranda (1975) questioned the determinant role of acculturation in accounting solely for alcohol-related problems among Hispanic Americans. Miranda hypothesized that ethnic minority group members who were acculturating to the dominant Anglo American achievement goals would exhibit relatively low rates of drinking and deviant behavior if their economic position provided them with reasonable access to these goals. Conversely, those acculturating minority group members without such access would display relatively high rates of drinking and deviant behavior. In other words, socioeconomic factors are important.

Alcocer (1977*b*), in his study of Hispanic Americans in California, found high rates of poverty, between 82.5 percent and 88.8 percent as determined by family income. Alcohol-related problems were also found to be high in these areas. Picard-Ami (1973), Sanchez (1974), and Cassillas (1975) cited socioeconomic status as a cause of high alcohol use and abuse. However, Guinn (1978), in his study of Mexican American youths in the Lower Rio Grande Valley region of Texas, found no evidence of a clear cut relationship between socioeconomic level and alcohol use among Hispanic American youths.

Minority group status was indicated as a cause of high incidence of alcohol use and abuse (de Rios and Feldman 1975; Dobkin-de Rios 1979). Certainly, discrimination, prejudice, and low social status (all of which are associated with minority group status) are experienced by many Hispanic Americans in the United States.

The factors of anomie, acculturation, socioeconomic status, and minority group status are all related to stress and, as such, can be linked to health problems of all types. These factors indicate quite clearly that the Hispanic American is subject to high levels of stress of various kinds and that such stress may make itself evident in Hispanic American men through high rates of alcohol use and abuse.

Overall, the various causative and contributory factors given above serve to demonstrate the difficulties involved in attempting to pinpoint causes. Martinez (1977) stressed the need to take into account not only the individual attitudes of Mexican Americans toward drinking but also environmental and sociocultural influences. The same could be said of Hispanic Americans as a group: a holistic, comprehensive approach must be used in determining the causes of alcohol use and abuse.

Prevention, Treatment, and Rehabilitation

The literature cited above indicates that Hispanic Americans have a higher than average rate of alcohol use and abuse. As such, there is a need for prevention, treatment, and rehabilitation programs for this population. The areas of treatment and rehabilitation will be discussed together because in the field of alcoholism they are almost synonymous, or at least not easily differentiated.

Prevention

Although many authorities have strongly urged that prevention programs be adopted for Hispanic Americans, Alcocer (1975) noted that little actual research has been done on prevention approaches and prevention models that have been successfully tested and used with the Hispanic American population.

In spite of this, some researchers found a receptivity among Hispanic Americans for prevention programs that focus on abstinence (Cahalan 1974; Cahalan et al. 1976). A service needs assessment survey conducted in Orange County, Calif. (Engmann 1976), found that the Hispanic American residents interviewed placed top priority on youth alcoholism services and prevention education.

Alcocer (1975) noted that programs for driving-while-intoxicated offenders offered the best format for primary prevention in terms of cognitive and emotional education for the Hispanic American, but he did not cite any data beyond clinical observations to support this contention. However, in an analysis of the Los Angeles Roadside Survey (which contained a Hispanic American subsample), Haugen (1975)

concluded that people did not know the facts about driving and drinking. The author stated that more innovative public education campaigns were needed and that such campaigns should be directed toward the "significant other" who might intervene with the drunk driver. Drivers reported in the survey that intervention attempts had been successful and were appreciated. Most drivers favored being interveners themselves.

Alcocer (1979), in his evaluation of a Hispanic American alcohol program for drunk drivers, noted the positive response of first-time offenders to short-term alcohol education programs. Balain (1973) stated that prevention (as well as rehabilitation) in Puerto Rico would have to be as encompassing as possible so that the same modes of communication and influential society factors that encouraged drinking could be used to bring about a reversal of the condition to responsible and controlled drinking. Samora (1961) and Jacobs (1975) both stressed the need for prevention programs to take into account the beliefs, practices, and characteristics of Hispanic American populations.

Current attempts at primary prevention are utilizing a variety of approaches, although little has found its way into the literature. For example, this writer is aware of an alcohol education program headquartered in San Francisco, Calif. (the *Ganadores* program), targeted at the Hispanic population. In the Los Angeles area, the *Ayudate* program is completing a study of process-oriented alcohol education utilizing peer advisers/teachers (high school students) at the intermediate school level. Certainly, other programs are being attempted and their results will be of interest.

Treatment and Rehabilitation

In terms of treatment and rehabilitation of alcohol-related problems for Hispanic Americans, one issue often raised in the literature was the underutilization of health services by Hispanic Americans. Melton (1974), for example, in his study of Hispanic American farm workers, found an underutilization of medical services for alcohol-related problems in Kern County, Calif. Moustafa and Weiss (1968) reported an underrepresentation of Chicanos in psychiatric treatment facilities and suggested that narcotics and alcohol were the culturally preferred means among Hispanic Americans for dealing with psychiatric stress. Karno and Edgerton (1969) also found an underrepresentation of Hispanic American patients in public psychiatric outpatient and inpatient facilities in California. The authors explained this underrepresentation, not as a sign of low incidence of mental illness, but as a complex of social and cultural factors including, but not limited to, language barriers, the active role of the family doctor in treating Mexican Americans' mental illnesses, self-esteem-reducing experiences with Anglo agencies, and the lack of mental health facilities in the Hispanic American community itself.

Saunders (1954) and Nall and Speilberg (1967) suggested that cultural factors were responsible for underutilization so that acculturation was seen as one way to resolve the problem. However, Weaver (1974) argued against this point of view, citing as factors the absence of health facilities in Hispanic American communities, the dearth of Spanish-speaking staff in available health services, and the heterogeneity of Hispanic Americans. Berkanovic (1971), Bullough (1972), and de Rios and Feldman (1974) all implied that the cultural inappropriateness of health services was perhaps the greatest barrier to the utilization of services by Hispanic Americans. Jimenez (1977) pointed out that many aspects of current alcohol rehabilitation approaches conflict with Hispanic values and traditions. He emphasized the importance of having bilingual and bicultural staff in drug and alcohol treatment programs for Puerto Ricans.

In terms of services for alcohol abuse and alcoholism, the literature echoed what was apparent for health services in general. Caste and Blodgett (1979) found that Hispanic Americans underutilized services and that institutional barriers, cultural differences, and language barriers accounted for this underutilization. Balain (1973) found such services for alcohol abuse to be inappropriate or unavailable for Puerto Rican teenagers with drinking problems. Several authors urged a greater awareness by service providers of the special needs of Hispanic Americans (Alcocer 1977*b*; Beigel et al. 1974; Christmas 1978; de Rios and Feldman 1975; Freudenberger 1976; Jacobs 1975; Martinez 1976; Melton 1974; Phelps 1973). Such awareness usually takes the form of an understanding of the patients' cultural traditions and language by the staff.

In regard to treatment of the Hispanic American alcohol abuser the literature is very limited. Cisneros (1977), in working with alcoholics in Mexico, noted that the most successful treatment and rehabilitation combined psychotherapeutic support with participation in Alcoholics Anonymous. Several authors pointed to the importance of the family and its involvement in the treatment process (Aviles-Roig 1973; Community Welfare Planning Association of Greater Houston 1975; Corrigan 1974; Jimenez 1977; Kessler and Rosario 1975; Pearson 1974). In one study, Hispanic American respondents felt that treatment was more effective when conducted by persons of their own ethnicity (Mission Unity Group Center 1975). Smith (1968) found that Hispanic American chronic alcoholic offenders (public inebriates) more often responded to treatment than other racial groups in a nonpenal rehabilitation program.

Culturally determined beliefs must also be taken into account in treating the Spanish speaking (Samora 1961). Torrey (1973) felt that folk medicine continued to play a role in the lives of Hispanic Americans. Trotter and Chavira (1977) took this notion one step further and considered the potential for integrating the culture-specific counseling and therapeutic techniques of the *curandero* (folk healer) and conventional treatment procedures. Fields (1976) quoted Garrison as

suggesting that psychotherapeutic interventions might be more acceptable if they resembled some of the spiritualist practices in certain technical aspects.

Abad (1974) pointed out the conflict inherent in treatment approaches that require the alcoholic male patient to admit his dependence on alcohol because the Hispanic American adherence to the idea of *machismo* would necessarily consider such dependence a weakness. Hence, there is a need to positively employ this concept with an absence of threat to the person's self-image. Johnson (1975) also pointed out such conflicts and the need to understand fully the Hispanic culture and its values when attempting to treat the Hispanic American.

The literature overwhelmingly points to the need for culturally relevant prevention, treatment, and rehabilitation services for the Hispanic American. It is important that the literature does not suggest separate programs but rather relevant programs. The literature also points out that Hispanic Americans recognize the need for such services in their communities and are receptive to them (Alcocer 1977*b*; Cahalan and Treiman 1976; Engmann 1976; Penningroth et al. 1974).

Conclusions and Recommendations

Several conclusions can be reached from the literature reviewed in this paper:

- Hispanic Americans are a culturally, racially, and socially diverse population.
- The use and abuse of alcohol among Hispanic American males is quite high compared with the general population.
- Hispanic Americans experience severe negative consequences affecting their physical and mental health as a result of their abuse of alcohol. Their communities are also endangered and suffer economic loss because of such abuse.
- While the relationships between some causative and contributory factors are speculative, a number of variables can be pointed to as contributing to the use of alcohol by Hispanic Americans.
- The existing prevention-treatment-rehabilitation models for dealing with Hispanic American alcohol problems are subject to major criticisms with regard to availability, appropriateness, and adaptability to the needs of the heterogeneous Hispanic American population.

Clearly, the alcohol problem among the Hispanic American population is so pervasive, so widespread, that it could be labeled an epidemic. As such, emergency measures would seem appropriate. However, the financial climate at all levels of government dictates less spending and fewer programs. The task, then, is to affect the greatest number of people with minimal resources. Perhaps the most imaginative and creative planning will result from the utilization of existing resources and

the modification of existing service systems to meet needs. It is from this point of view that the following recommendations are offered. An attempt was made to identify actions that would have the potential for widespread impact.

First, since the literature is beginning to suggest that physiological predisposition and/or susceptibility may be related to the high prevalence of alcohol abuse and alcoholism among Hispanic Americans, a great impact could be made on the problem if a physiological cause were identified. Obviously, the funding of research in this area is important.

Second, drunk-driving diversion programs merit special attention and encouragement because they have the capacity for being self-supporting and because they can result in savings to the law enforcement-criminal justice system. Interestingly, little has been reported in the literature about these programs although they can be highly effective in the early identification of potential problem drinkers and in the treatment and rehabilitation of established alcohol abusers. What is needed, however, is uniformity and standardization of legislation and of prevention and treatment approaches. The Federal Government is in a position to fund the development of model legislation and model programs for Hispanic Americans. Because these programs have the potential to become self-supporting (the user pays for services received in lieu of paying a fine), it is also important for the Federal Government to provide seed money for drunk-driving diversion programs aimed at Hispanic Americans.

Third, persons in the field of alcohol abuse and alcoholism who work with Hispanic Americans are often impressed by their clients' misconceptions, misinformation, and ignorance about alcohol abuse and alcoholism. For example, "an alcoholic is a person on skid row" or "beer is not really alcohol." When such misconceptions, misunderstandings, and ignorance are corrected, changes in attitudes and behavior are often observed. Hence, model alcohol education programs should be developed; these programs should be appropriate in style and content to the various segments of the Hispanic American population. Such programs should be easily available to community agencies and groups in the form of educational packages either free or for a nominal cost.

Fourth, communities have often demonstrated their ability for self-help, yet this resource is often ignored in program planning. Hispanic Americans are particularly wed to their community or barrio and have a strong sense of territoriality. With this in mind, it is recommended that a national community training center be funded to carry out community organizing, development, planning, and training activities in Hispanic American communities for the prevention, treatment, and rehabilitation of alcohol abuse and alcoholism. Such a center would be relatively small and its budget need not exceed $200,000 annually. However, through a variety of techniques and approaches, its influence could be widely felt. Short-term, high-intensity contacts and training could be

used to help Hispanic communities develop locally determined, implemented, and funded programs. In short, communities could be helped to identify and prioritize their needs, identify resources to meet these needs, develop and implement plans of action in a spirit of collaboration and cooperation.

Aside from these four major recommendations, this writer also urges the following more general actions. An accurate data base should be developed to reflect the various segments of the Hispanic American community and the use and abuse of alcohol by these segments. Demonstration and evaluation money are needed to initiate comprehensive alcohol abuse and alcoholism programs that would address the several causative factors that have been identified in the literature and to develop effective prevention, treatment, and rehabilitation services staffed by personnel sensitive to the similarities and differences of the various Hispanic American subgroups. Such demonstration programs would include the use of the informal support networks of the Hispanic American, such as the family, folk health practices and practitioners, and religious institutions. Degreed and nondegreed professionals should be educated about the particular cultural needs of Hispanic Americans in the process of alcohol abuse prevention, treatment, and rehabilitation. Finally, efforts should be made to recruit and train Hispanic Americans in the field of alcohol prevention, treatment, and rehabilitation at both the degreed and nondegreed professional levels.

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Chapter 14

Alcoholism: Studies Regarding Black Americans 1977–1980

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Abstract

In this review, the growth in knowledge and action made in alcoholism studies among the black population since the Third Special Report on Alcohol and Health (U.S. Department of Health, Education, and Welfare, 1978) are examined.

Only articles (journal sources, books, and dissertations) published in 1977 or later are included, and only research that clearly defined the use of a black sample (not always representative) was used. This review is organized under the following five major topics: (1) theoretical preamble, which includes key findings from questions raised by prior research, operational definitions of concepts, and a working model for analysis of the published literature; (2) research issues, which focus primarily on analysis of the published literature in the areas of diagnosis, epidemiology, drinking characteristics, etiology, and related issues; (3) response to the problem, which explores social actions in the area, including treatment, prevention, and professional concerns; (4) methodological issues, which examine the frame of reference for research on black populations, the theories, the assessments, the subject designs, and the rigor of the research; and (5) implications and conclusions, which deal with present concerns and directions for future action. It is concluded that, since the last report to the U.S. Congress, the problems and conseuqences of black alcoholism have become even graver and very little is being done about them. The problem has not yet been fully legitimized in the black community so as to allow for community-defined standards, folkways, and mores on the subject of drinking. What is observed is an increasing use of alcohol at an earlier age by youth, and a growing intensity of use by women, with serious implications for fetal alcohol syndrome. The general failure to devote more resources to the problem may imply not only a lack of serious attention to the plight of a large percentage of the population, but also the use of alcohol to maintain a particular class relationship. Also, there were too few attempts to study children or the elderly, or to examine multiple variables simultaneously and over some historical time period. It is urged that a new research order in the examination of alcoholism in the black community must be forged, and new ways through research be found to allow individual blacks and black groups to positively recreate themselves and their communities.

Introduction

> *I, the man of color, want only this: That the tool never possess the man. That the enslavement of man by man cease forever.* F. Fanon (1967, p. 231)

Fanon's plea for humanity to remove human enslavement is a useful starting point for a report on alcoholism, with specific reference to black Americans. Fanon's hope that the tools "never possess the man" translates into the desire that research never be used to mystify and obfuscate; his hope that "enslavement of man by man" cease forever speaks to the concern that researchers not use their skills to participate in the process of oppression (King 1978). This research review, as part of a report to the U.S. Congress, is fundamentally concerned with these issues and indeed with the real political questions raised by alcoholism among black Americans. It takes as its point of departure the *Third Special Report on Alcohol and Health* (U.S. Department of Health, Education, and Welfare 1978). It examines mainly the literature published between 1977 and 1980 on alcoholism in black American populations or samples that include such populations. Its ultimate concern is about the implications of this body of published literature for the quality of life of black Americans. Only articles published in 1977 or later were included in this report. However, because of its significance, the work by Harper (1976) was included as a point of reference. Studies on prison populations were excluded.

The task of this review is to examine the growth in knowledge and action made in alcoholism studies among the black populations since the last report. The struggle is for an objective analysis of the literature, to inform the reader of the work being done, its strengths and limitations, and possible directions for future action.

This state-of-the-art review comes from 44 journal sources, 17 books, and 13 dissertations. The major journal sources were the *Journal of Studies on Alcohol* (15 articles) and the *International Journal of Addiction* (6 articles). Only research that clearly defined the use of a black sample (not always representative) was used. The review is organized under five major headings:

- THEORETICAL PREAMBLE: includes key findings from and questions raised by prior research, operational definitions of concepts, and a working model for analysis of the published literature.
- RESEARCH ISSUES: focuses primarily on analysis of the published literature in the areas of diagnosis, epidemiology, drinking characteristics, etiology, and related issues.
- RESPONSE TO THE PROBLEM: explores social actions in the area, including treatment, prevention, and professional concerns.
- METHODOLOGICAL ISSUES: examines the frames of reference for research on black populations, the theories, the assessments, the subject designs, and the rigor of the research.

- IMPLICATIONS AND CONCLUSIONS: deals primarily with present concerns and directions for future action.

Theoretical Preamble

Almost 100 years ago, in the first "pieces of research" done on black Americans, Brinton (1891) compared the physiology of blacks and whites "for signs of inferiority." He concluded that blacks were not as susceptible to acute alcoholism as whites. He attributed this seeming immunity to "the inferior susceptibility [of the black's] nervous system" (pp. 6-7). What would Brinton say today if he read Harper's (1976) book on *Alcohol Abuse and Black America*? The 100 reports since 1976 leave Harper's major finding unchallenged: Alcohol abuse remains the No. 1 health problem in black America. In 1980 the picture has not improved significantly over 1976; no real breakthrough is in sight, in the form of either a national social commitment (Roman and Gebert 1979) or definitive social science activity (Harper 1979).

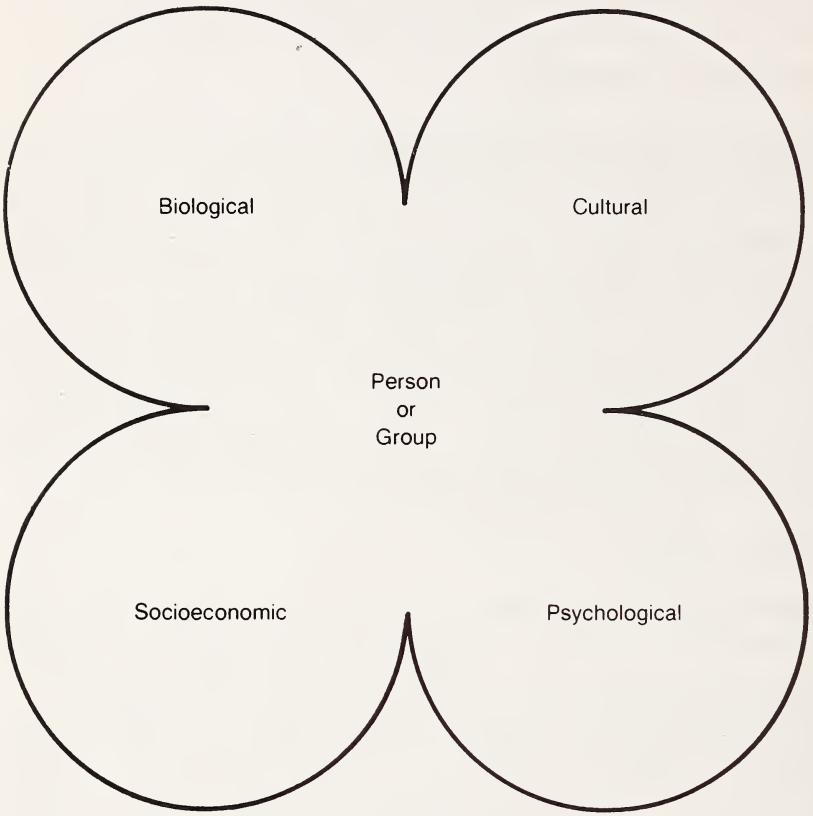
Conceptual Issues

The literature is still without a paradigm to facilitate a critical perspective or a set of consistent theories to guide a historical understanding of alcoholism. However, there has been a recent shift in emphasis in the field of alcoholism from seeing alcoholism as a set of categorical and discrete conditions affecting particular groups who were presumed to suffer from an illness of uncertain etiology, to seeing alcoholism as an endpoint in a drinking continuum which begins with normal drinking (e.g., O'Connor 1977). Professionals have also begun to move from Jellinek's (1977) unitary concept, which assumes that all persons affected are substantially the same, to multivariate models, which focus on the more complex and scientific questions. What syndromes, at what stage, affect what kinds of people? Have these recent trends made a difference to the black reality?

In keeping with the direction of these new trends, this review utilizes King's (1979) conceptual model to guide an analysis of the literature. King combines and defines in his model the two questions raised in the preceding paragraph. His model puts the person or group at the focal point of four historical (continuous processes) and irreducible (primary) interactions which singly or in some combination produce the behavioral essence of the person or group. The irreducible interactions are biological, cultural, socioeconomic, and psychological, as defined by the environmental context of the person or groups. (See figure 1.)

The term *biological* is used here to imply the physical, endocrinologic, metabolic, and central nervous system functioning. *Cultural* implies the

Figure 1. The Irreducible Subsystems of Human Action



SOURCE:King 1979.

NOTE: Model is used here as a discussion model to highlight and clarify the research. The model also has utility when one considers multivariate designs, e.g., biohavioral, sociocultural, and psychocultural.

subgroups of values, lifestyles, meanings, and world views or ways of being in the world. Alcoholism must be considered as a cultural artifact, with the forms and meanings of drinking alcoholic beverages culturally defined. *Socioeconomic* implies the issues of status, class, education, income, and role. *Psychological* refers to the behavioral indexes and particular personality. This framework will serve as a discussion model in the literature review.

The *Third Special Report on Alcohol and Health* (U.S. Department of Health, Education, and Welfare 1978) continued at least to recognize the need for the development and implementation of culture-specific programs for alcoholics. This clear initiative to distinguish special populations from the dominant culture has become policy at the Federal

level. Despite the label "culture-specific programs," far too often the literature deals with blacks in racial rather than ethnic (cultural) terms and within narrow limits of individual genetic determinism, with little regard for the class position occupied by black people in the society.

This literature review begins with the premise that the status of blacks in American society makes them unique. Their migration and their history of continual struggle to surmount and change the oppression of the social system have resulted in the emergence of black ethnicity, that is, an American group with a shared cultural history (Taylor 1979). The black community may be considered more scientifically if researchers understand it in ethnic rather than racial terms, with emphasis on its class position in American society.

Finally, there is the problem of defining alcohol abuse and alcoholism. Alcohol abuse and alcoholism as used here mean involvement with alcohol that is actually or potentially harmful.

Prior Findings

What broad generalizations can be made from a review of the 40 studies on blacks reported by Harper (1976)? One could conclude (a) that there has been a rapid increase in heavy drinking among 18-25-year-olds and women under 45; (b) that one-third of all adults are users or abusers and one-half of all youths are; (c) that men seem to drink to regain feelings of strength and women to alleviate emotional distress caused by a feeling of alienation; (d) that alcohol was involved in the majority of violent crimes and about half the traffic fatalities; (e) that most research done involved surveys and correlational studies; (f) that most researchers attributed problem drinking to either cultural/familial, socioeconomic, or psychological factors; and (g) that treatment success among blacks has been limited and very little has been done in the area of prevention.

Admittedly, these are broad generalizations drawn from disparate studies, but they do provide a backdrop from which we can review the progress—or, more correctly, the lack of progress—in the alcoholism field in black America between 1977 and 1980.

Research Issues

The research data cover an extensive literature organized into five critical question areas addressed by researchers. These are (a) diagnosis and labeling; (b) incidence and prevalence; (c) characteristics, patterns, and practices among groups; (d) etiology; and (e) related studies. The King (1979) model will be used as a discussion framework in each of these areas.

Diagnosis and Labeling

This subject area addresses the problems inherent in the attempt to arrive at a definition of what constitutes alcoholism—a still very much misunderstood phenomenon. Is there an objective reality to diagnosis or is it merely a value choice of the particular social or cultural group (McKirnan 1978)? How one recognizes and defines alcoholism has implications for problem resolution. To what extent does a person's violation of the norms relevant to his or her immediate social milieu lead others in this milieu to make the "primary" identification of that person as an abuser of alcohol, leading to secondary identification as an official diagnosis and intervention.

The eight studies reviewed point to the limited attention being paid to one of the more serious difficulties in the alcoholism field—the absence of a definition. This problem is particularly critical in an ethnic/culture-specific context with variations within classes. Nowhere in the literature were there any studies on diagnosis of alcoholism among black populations using biological indexes.

None of the studies covered a cultural definition; this is an especially serious omission given the need for understanding community-defined standards in the struggle to legitimize the attack on the problem in a culture-specific context.

Few studies focused on diagnosis and labeling from a socioeconomic vantage point, i.e., from a social and economic approach focusing on patterns of social interaction (e.g., religion) and income distribution (e.g., class). Anderson (1978), in a study of a social group centering on a bar in a low-income black community, found that the men in his sample classified themselves into three distinct types: the regulars, who were steadily employed and had families and strong personal values; the wineheads, men who failed in life and used drinking as their prime source of entertainment; the hoodlums, who emerged from street gangs and saw drinking as part of their "tough image." Warner (1977) attempted to define and group alcoholics selected on the basis of their Minnesota Multiphasic Personality Inventory (MMPI) scores and selected variables—religion, marital status, sexual orientation, age, education, employment status, parental alcoholism, and prior drinking. Four types of alcoholics emerged: (a) extremely anxious and depressed younger Catholic users, (b) anxious Catholic bachelors, (c) repressed older Protestant married users, and (d) unrepressed older Protestant users. These studies were the only ones of their kind and were certainly too limited to give the critical data needed in this area.

Psychological studies of diagnosis and labeling were more numerous. Four of the studies gave major attention to the use of the MacAndrew Alcoholism Scale in distinguishing alcoholics from controls (Burke and Marcus 1977; Ludmar 1978). The scale was found generally to provide a valid screening device for alcoholics (Knox 1978). This further suggested that alcoholics have personality characteristics that distinguish them from other groups. These characteristics appear to

include depression and anxiety in combination on some scale. Studies of black populations using other psychological measures found among alcoholics a more passive and compliant coping style; higher levels of emotional distress; confusion; personality weaknesses and vulnerabilities; suspicion; general conflict in self-perception; and a more poorly developed reality concept (Carroll et al. 1978).

The psychological studies were limited by their emphasis on comparing blacks with whites (Ludmar 1978) and alcoholics with drug addicts (Carroll et al. 1978). As a group of studies on diagnosis and labeling, they contributed very little new data to a field that already places the burden on depression and anxiety. Researchers have yet to discover, for instance, how differing age groups are affected or if the manifestation differs in men and women.

Incidence and Prevalence

The issues of incidence and prevalence (epidemiology) are directed toward the number of new cases (incidence) and the total distribution of cases at a particular time (prevalence). There was little formal research analysis on epidemiology of a biological nature, for example, studies on the incidence or prevalence of cirrhosis of the liver in black populations. The U.S. Bureau of the Census (1979), which has kept such statistics on black populations since 1910, reported that since 1940 there has been a rapid annual increase in the frequency of cirrhosis of the liver as the cause of death—from 5.8 per 100,000 in 1940 to 20.4 per 100,000 in 1974. There was also a reported 10 percent increase in the number of hospital patients (from 40 to 50 percent) with a secondary diagnosis of alcoholism (Christmas 1978). Here is a case in which a search for familial incidence of alcoholism would aid greatly in our understanding the role of hereditary factors in alcoholism in black populations.

Little work has been done on cultural indexes, that is, incidence and prevalence as a function of values, lifestyles, or meanings. We can only infer from the subcultural groupings studied what cultural parameters were operating. Brunswick (1977) and Myers (1977*a*) reported increased incidence of use in youth 14-18 years old; Keil (1978) and Lowenfish (1977) reported similar increases in women 21-65 years old; and Schuckit (1977) reported the same trend in the elderly. Engs (1977) indicated that the percentage of students who drink appears to be similar to the percentages of 5 and 25 years ago, that black women are drinking more now than in the past, and that fewer black men are heavy drinkers. The findings of this study contradict all other research findings. Klatsky et al.'s (1977*a*) data revealed dramatic increases in drinking by those aged 15-19 and 20-29, with the shift being more dramatic for males. Another significant shift, in the direction of abstinence, occurred after age 49, with the largest shift in women aged 60 and over. These groups were not treated as subcultural entities. Future study should reflect on the cultural aspects of these changes, that is, on the values or lifestyles that are in flux or gaining a foothold. Why, for instance, is the

consumption of alcohol (3+ drinks per day) most prevalent in the age decades 40-49 and 50-59 (Klatsky et al. 1977*a*)? Is there some midlife crisis operating? We need to explore subcultural groups more critically.

At the socioeconomic level of analysis, that is, the study of epidemiology as a function of income or class or job status, etc., there is also very little to report, although some studies hinted at an increased incidence of alcoholism in the black middle class female. We do not know what differences exist within the black population between various status categories, income groups, or role groups. What is the hidden meaning of reports that 70 percent of all black adults drink alcohol to some extent (Bell et al. 1977) and that black males are twice as likely to be heavy drinkers as black females but that sex differences are beginning to disappear (Wechsler et al. 1978)? Is the role of the female changing? Wechsler et al. (1978) also reported that drinking frequency now reaches its peak in the 16-23-year-old group (Best 1979), not the 18-25-year-old group as reported by Robins et al. (1965); that drinking is highest among divorcees under 45 years old; that the lower class has the lowest proportion of drinkers, but not necessarily the lowest proportion of heavy drinkers or abstainers. Globetti et al. (1977) also reported greater prevalence of drinking for urban black youth than for rural black youth. We still fail to entertain the hypothesis that socioeconomic forces may play a significant role in the genesis and development of alcoholism.

Again, there is little to report when one examines the psychological parameters of incidence and prevalence, that is, the relationship of distributions to psychological variables (e.g., depression and dependency). All we have to go on is the persistent finding that drinking is correlated with smoking (Brunswick 1977).

The studies reviewed were almost all confined to the Northeast and Southeast regions of the United States, with little attention to the Midwest and West. There was no reported effort to follow up some significant work already done in the field, for example, Westermeyer's (1976) work on incidence rates as a function of ritual, rules, and conditions of first drink. Furthermore, in the field of alcoholism epidemiology, it is uncertain whether the reported increase in frequency is a function of more openness, better data gathering, increased sensitivity by helping professionals, or new formulations of old problems.

Characteristics, Patterns, and Practices

Here we raise questions about the manifestation and direction of responses by the individual or group and the variation and modulation given the occurrence of the event of drinking. What distinguishes the drinking of various black groups? By far the greatest number of studies on black populations were concerned with patterns of use with one central emphasis, the social context of the patterns.

Only one report, hinting at racial differences in patterns of alcohol metabolism (Stalls 1978), was found in the area of biology. We know little about neurotransmitter alterations or biochemical patterns or, as suggested by Bourne and Light (1979), whether alcohol is used for self-medicating emotional distress.

The same limitations exist in the search for studies of and Harper (1976) remain unchanged. Benjamin reported that, among rural blacks in Mississippi, drinking was a functional and pervasive activity, with upper income blacks tending to drink more on weekends and week nights. Harper reported similar trends, with lower class blacks tending toward status drinking of highly priced liquors. But studies of patterns and practices as a function of culture still need to be done.

Numerous studies focused on patterns in the context of socioeconomic variables (e.g., Blumberg et al. 1978). When the findings of these studies are combined, we begin to approach a comprehensive picture in the area's pattern differences as a function of age, sex, education, income, etc. Dembo et al.'s (1978) study of urban youths found that patterns of increased use could be attributed to the youths' perception of their neighborhood or peer group. The more they saw the community as tough or the more they searched for status among the peer group and lack of involvement with school, the more they drank. In a study of rural youth, Globetti et al. (1977) found that usually there was no parental permission for drinking, in contrast to earlier studies of rural youth which found that they usually took their first drink with their parents (Harper 1976). The rural youth who drank were associated with churches that condemned the use of alcohol on moral grounds; these youths obtained alcohol illegally, used it surreptitiously, and had a close friend who drank. In this atmosphere devoid of restraint, the use of alcohol was seen as a symbol of rejection of adult standards. Urban youth, on the other hand, seemed to use alcohol as a symbol of belonging to a "tough" community or peer group (Dembo et al. 1978). Globetti et al.'s findings on youth are quite different from those of Heath (1978), Keil (1978), and Wechsler et al. (1978), who all reported parental permission and participation in the initial drinking of youth, both rural and urban.

Adult drinking patterns tend to stabilize between the ages of 29 and 39 (Klatsky et al. 1977*b*), with increased abstinence at 40+ years. Use in adults was pervasive, with black groups demonstrating the least shame or fear of having high-severity (excessive use) patterns (Wanberg et al. 1978). Youthful drinkers preferred beer and wine; adult drinkers used more whisky and gin (Lowenfish 1977).

There were distinct differences between male and female patterns of use. Adolescent girls aged 12-15 drank more than boys in the same age range, but the trend reversed after this period. Women, on an average, were older at the first drink, tended to drink alone, tended to drink distilled spirits, were periodic or binge drinkers, and tended to move more rapidly into alcoholism (Lowenfish 1977). They also tended to belong to religious groups with proscriptions against alcohol, but those

women who were churchgoers were less likely to drink. A significant number of women had mothers who drank, although if the father was an abstainer, the daughter was more likely to abstain also (Keil 1978). Over 50 percent of the women drinkers were divorced or had never married (Wechsler et al. 1978). Women with the lowest education were the highest abstainers (Klatsky et al. 1977*a*), while the inverse was true for men. Sieber (1979) found that women with the lowest social integration tended toward heavy drinking. This profile of drinking patterns approaches a comprehensive picture, but there are still many gaps in the literature.

The personality type psychological studies reporting the characteristics of alcoholics neither distinguished within the extreme behavior of alcoholism nor between it and any other negative extreme behavior. The studies reported that alcoholics, compared with nonalcoholics, were, as a group, more field dependent (Hoar 1977), resembled psychotics in the way they represented imaginal forms in their imagination (Deiker and Chambers 1978), and more often exhibited external locus of control (Cox and Luhrs 1978). These are the same general findings for black people, particularly children, independent of alcoholism. Critical studies should examine the differential patterns of motivation, behaviors when under and not under the influence of alcohol, and cognitive styles under the same two conditions. What factors combine to maintain alcohol abuse once a pattern of excessive drinking has been established? Are they psychologically based, culturally based, or a combination of variables?

Etiology

The search for specific causes of alcoholism was the major emphasis of a great deal of the work undertaken. Establishing clear-cut relationships is a difficult challenge, and the research necessarily only approaches an understanding of the relationships among events. How important is alcohol in alcoholism? Is alcoholism a stress disease? The search for causes parallels the model of analysis used here.

In the biological search for cause there were two studies. In a study of differential biological sensitivity to ethanol as a predictor of alcohol abuse and alcoholism, Zeiner and Paredes (1978) suggested possible neurochemical bases for ethanol addiction based on differential ethanol metabolism rates. Cotton's (1979) review of 39 studies on familial incidence of alcoholism revealed that rates of alcoholism were substantially higher in relatives of alcoholics than relatives of nonalcoholics, even when the nonalcoholics were psychiatric patients. There is yet to be done a definitive study looking at genetics or hereditary factors in black alcoholism that may include the lack of intolerance to alcohol and the euphoric and dysphoric effects of alcohol, or studies on neurotransmitters in black populations with emphasis on brain infarction. People differ in physiological and morphological features that could influence brain alcohol content.

Another area of search is the cultural sphere. Is alcoholism tolerated more in the black community (Harper 1976)? Is it a cultural variables (Best 1979; Jarvis 1978) but few studies that examined them. A large part of the problem may be a function of seeing black only as a color reality and not as a cultural reality (Taylor 1979). There is an urgent need to examine alcoholism in relation to cultural or subcultural ethos in a black community context.

Harper (1976) described the overemphasis on the pursuit of intrapsychic causation to the exclusion of socioeconomic or social stress factors. One study in this direction (Brunswick 1977) suggested that adolescents drink to handle stress. Dembo et al. (1979) is an excellent study which examined a causal model explaining inner-city youth drug involvement using environmental variables that previously had been investigated singly or in various combinations. They developed data suggesting that the availability of drugs, a view of the neighborhood as tough, the esteem given drug users, and peer pressure all are strong influences on alcohol use. Higgins et al. (1977), on the other hand, placed less emphasis on social stress and family disorganization and suggested that some of these myths need to be dropped in favor of other explanations. Far too few studies that follow up on Higgins' concern have been developed. The question of alcoholism as a social stress problem remains open (Roizen 1978).

The search for psychological or individual personality causation has always occupied center stage in the etiology of alcoholism. Studies have focused on cognitive impairment (Deiker and Chambers 1978), emotional disability (Costello et al. 1978), and personality characteristics (Graham 1977). The data are quite inconclusive. Carroll et al.'s (1978) data indicate that black male alcoholics scored lower on personality integration, with a more passive and compliant coping style, than other ethnic group male alcoholics. Empirical derivation of a partial personality typology of alcoholics including a black sample gave general support to this finding (Costello et al. 1978). Graham (1977) studied the personality of the alcoholic using a 16-factor personality questionnaire in an attempt to predict proclivity toward alcoholism. He found 8 personality factors that significantly differentiated between alcoholics and nonalcoholics. Alcoholics were less intelligent, less affected by feelings, more suspicious, less practical, more apprehensive, more experimenting, undisciplined, self-conflicted, and tense. The size of the black sample was too small to make definitive statements about the black population, but the research does suggest an area of pursuit. Paton and Kandel (1978) found evidence suggesting that psychological factors play a different role in adolescent drug involvement within various social and cultural groups. Depressive mood, for instance, was negatively related to multiple drug use for black youth but not for other youth groups. Steer and Shaw (1977), using the Beck Depression Inventory, studied the structure of depression in black alcoholic men in an attempt to replicate some prior research. The meaningful dimensions of depression identified were cognitive-affective impairment, retarded

depression, and escapism. The most replicable dimension in their sample appeared to be cognitive-affective in nature.

Despite the limitations of the studies and the complex associations between affective disorders and alcoholism, the general direction suggests that in the black population, at least from a psychological vantage point, dependency and depression, whether primary or secondary, are perhaps the most frequent affective disorders found in adult alcoholics (Fine and Steer 1977; Sutker et al. 1979). We have no clues as yet to explain differences between youth and the elderly, or the severity of dependence. In their analyses of treatment, many researchers implied that the cause was implicit in the cure; they were, however, engaging in the treatment etiology fallacy.

Related Research Studies

Numerous studies looking at the relationship between alcohol abuse and various indexes—biological, cultural, social, and psychological—shed more light on the problem of alcoholism.

On the biological level, for blacks alcoholism appears to severely affect cancer rates (Keller 1978; Tuyns 1978), obstructive pulmonary disease and severe malnutrition (Moore et al. 1977), intestinal disaccharidase activities (Perlow et al. 1977), hypertension risk (Klatsky et al. 1977*b*), and birth defects (Russel 1977; Wood 1977). These studies have ominous implications for the black community.

At a cultural level there were few related studies. One research study examined how fourth-grade black youths as a cultural group compared with other groups in attitudes toward alcoholics. Blacks along with others rated alcoholics most negatively (Horne 1978). Wilsnack and Wilsnack (1978) examined the association between rejection of traditional femininity and drinking behavior. Black girls were likely to drink more symptomatically and with more negative consequences if they rejected traditional femininity. There are limitations on a study of this kind, the most obvious being the conception of "traditional femininity."

At the socioeconomic level, attention was paid to alcoholism and its relationship to crime, industry, and driving. Zacker and Bard's (1977) data were interpreted to mean that black assaultiveness was not related to alcohol use in police-managed disputes but was related to kinship and poverty. On the other hand, Heilbrun and Heilbrun (1977) found deficient self-control in violent crimes committed by blacks to be associated with alcohol use; Mayer and Black (1977) found a similar relationship between child abuse and neglect.

One study, with a 15 percent black sample, looked at alcoholism programs in industry. Such programs it was claimed aided job performance and rehabilitation (Heyman 1978). Another study, with a 51.7 percent black sample, focused on classification of men arrested for driving while intoxicated. Significant predictors in this classification were race, prior arrest record, previous treatment for alcoholism, use of

psychotropic drugs, and father's use of alcohol (Hooper 1977). The study is useful for clinical treatment.

Psychological studies focused on memory (Fine and Steer 1979) and personality characteristics (Groves 1978). Fine and Steer (1979) found short-term memory deficits in men arrested for driving while intoxicated. Rice (1976) found no such deficit. Groves (1978) confirmed the hypothesis that assertiveness training positively affects anxiety, assertiveness, and self-concept in male alcoholics. Using the Beck Depression Inventory, Fine and Steer (1977) found depression extremely common among black adult male alcoholic patients in a Philadelphia sample. Using the MacAndrew Alcoholism Scale, Sutker et al. (1979) reported similar results.

Response to the Problem

The central issue is the nature of intervention into the problem of alcoholism, that is, treatment strategies, prevention measures, and related actions. The response to the problem of alcoholism is a function of the conception of the problem and the values, prevailing beliefs, and world views of the respondent (King 1978). Consideration must be given to racism, poverty, unequal access to health care, cultural barriers, social factors, and psychological issues (Christmas 1978). In general, the research did not reflect direct concerns with the issues of racism and poverty.

One study done in Georgia examined the impact of increased availability and utilization of alcoholism services on blacks' death rates associated with alcoholism (Hodges and Lowe 1977). The evidence demonstrated that the health care system was unsuccessful in intervening in the process of alcoholism. The continued absence of studies reflecting selective examination of biologically based treatment strategies in the black community is indeed a very revealing, if not a startling, omission in the literature. Where are the medical and psychiatric professions?

Few studies examined cultural factors in treatment. Those studies that were found were more concerned with overall drug abuse treatment than alcoholism (Cutter et al. 1977; Linn et al. 1979). Not one cultural focus study dealt exclusively with black alcoholism. Many studies addressed alcoholism among black groups (e.g., Lopez-Lee 1979), but research studies looking at cultural variables are nonexistent. There are many subcultural groups within the black community that could be examined, especially where family background is relevant.

Socioeconomic considerations in treatment ranged from understanding demographic variables (Bentley 1978) to socioeconomic differences in followup rates (Welte et al. 1978). Most studies focused on socioeconomic variables of the victim, with little attempt to focus on the same variables in the social setting. Coney (1977) examined both

precipitating and enabling factors in the use of treatment services and extracted age, level of education, marital status, and living with dependent children as major precipitating conditions. The enabling components were drinking pattern (alone/other), nature of first problem resulting from drinking, and motivation. Argeriou (1976) developed an excellent summary of studies on utilization. He argued for the use of drinking-driver programs in aiding utilization (Steer et al. 1979). Some studies (e.g., Bentley 1978) focused on the success of treatment as a function of income, age, sex, education, and marital status. Black females were reported as being most likely to succeed in treatment. Other studies addressed issues of followup and prognosis (Ozarin and Wolfe 1979). The two studies in this area, Moos and Bliss (1978) and Welte et al. (1978), both reported that blacks had a lower followup rate and a poorer prognosis than other groups; women had a higher followup rate and better prognosis than men; and socioeconomic status did not make a difference, although social stability was a good predictor of both followup and abstinence. A study of its funded categorical programs by the National Institute on Alcohol Abuse and Alcoholism (1979) was one of the few studies reported that gave some attention to the treatment of ecological context. Success in treatment (as indicated by positive improvement at followup 6 months after treatment intake, drinking behavior, employment, behavioral change) was reported in selected programs which included 54,000 black clients. Palkon (1978) did an exploratory ecological evaluation of a treatment program looking only at alcoholics. He found no relationship between ecological perceptions and the perceiver's characteristics (sex, race, marital status). There is an urgent need to understand the match and mismatch between client as subjective and objective victim and the subjective and objective cultural indexes of the treatment context, including the community, the family, and the specific treatment setting.

Studies in the psychological sphere examined changes in cognition (Deiker and Chambers 1978) and personality constructs (Costello et al. 1978; Cox and Luhrs 1978) as a function of treatment. Findings were very speculative. For example, the relationship of locus of control to treatment success is unclear. If subjects become more internal, do internals in treatment become more internal after treatment? Or are we dealing with some regression phenomenon of extreme groups? The issues have not been examined scientifically.

The lack of systematic study in treatment follows the trend seen in all other areas. We can only continue to do more of the same and repeat our failures unless we begin to do the necessary scientific work critical to understanding the problem. Is there a message for the established order concerning why so few alcoholics are seen in private practice?

Prevention

The key issue under prevention is the recognition that a response to sociomedical problems based exclusively or even primarily upon

treatment services cannot reduce the existing levels of suffering. Attention must be addressed to a larger "inoculation" strategy based on health education campaigns and on fiscal, licensing, and consumption controls. Perhaps the key to such an approach is the extent to which a community has defined and legitimized, within its folkways and mores, alcoholism as a problem (King 1979). What are the attributes of the community and family concerning the problem and its course (McKirnan 1978)? To what extent does a person's violation of the norms of the group lead to some early or primary identification of that person as having a problem?

From a biological and physical health point of view no reported research studies addressed issues in the direction of inoculation. If indeed alcoholism is a disease of epidemic proportions, then a public health model of alcoholism control in the black community should be examined seriously.

The absence of culture-specific studies is even more difficult to comprehend given the clear attention of NIAAA to culture-specific realities and the repeated reports of lack of responsiveness of blacks to alcohol education programs (Globetti et al. 1977; McKirnan 1978). Can we regulate by manipulating values, lifestyles, and meanings? Dembo et al. (1978) suggested that, for highschool-based prevention programs addressed to youth, attention must be given in a comprehensive fashion to the social and cultural experiences that youths bring to school settings rather than to personality and interpersonal problems. Culture-specific prevention models at the adult level developed by Famutimi (1979), who trained ministers as alcoholism service agents, and by Robey (1977), who developed culture-specific training materials, fit into the general direction. Major research is yet to be done on black populations. Where is the critical study on the culture of the group or the study of black family life or the subcultures of the neighborhood? Work in these areas must begin immediately.

Most studies have centered on the examination of socioeconomic strategies for control and prevention. They have focused on early identification, education, and community action. Kittredge et al. (1977) studied new approaches to the task of allocating resources in developing prevention strategies, to estimate prevalence of misuse (for problem drinking as well as alcoholism), which would result in the identification of a larger population base of need. Hooper (1977) looked at the identification and management of the public inebriate population in searching for patterns that may assist preventive action. For example, one pattern found was the increase in public intoxication arrests on weekends and during warmer months. Numerous other studies, not directly addressing prevention but searching for characteristics of clients, attempted to lay the groundwork for early care findings and prevention of alcoholism (e.g., Globetti et al. 1977; Schuckit and Gunderson 1977). The issue of early identification is a fruitful one and should be pursued.

Emphasis in the socioeconomic sphere was also placed on a greater need to educate various public subgroups. The attempt was both to inform the public and to change its attitudes and beliefs, which sometimes are confused and widely divergent from those held by professionals regarding suggested modes of treatment (Banks 1978; Darity 1979). Smith (1978), addressing the education and training needs of paraprofessionals as alcoholism counselors, developed a composite list of information, behavior, and attitudes that should be part of the training program of every helping agent. Best (1979) suggested the need for education campaigns to counteract the negative data and influence of peers and television on potential victims. NIAAA has addressed itself to developing educational materials aimed package entitled "An Ounce of Prevention" provides for group discussions and helps black groups begin to rethink their own reality.

Those professionals who adhered to the sociocultural prevention model of the 1960s sociocultural failed to undertake the research necessary to specify the conditions under which norms could be activated and mobilized to influence conduct (Parker and Harman 1978). The distribution of consumption model of the 1970s argues for the strong effects of outlet availability on per capita consumption and alcoholism rates and puts the burden of responsibility on the availability side of the equation. Parker and Harman (1978) found that the availability of alcohol, independent of other factors, appears to influence alcoholism rates and that per capita income appears to influence consumption rates but not rates of alcoholism. These types of innovative model building and research would make a real difference to the alcoholism rate in black America, but, unfortunately, they are few and far between.

On a psychological level, studies have focused on motivation and individual knowledge base (Arthur et al. 1977), attitudes and values (Harper and Dawkins 1977), and drug-related cognition (Myers 1977*b*). All the data developed grew out of implications from studies directed at other issues. Psychological theory has numerous models that may be valuable to preventive approaches, but they are being underutilized. One such model is attribution theory, in which attribution for problem origins may be adaptive for both the alcoholic youth and the parent in a struggle to vitiate the disruptive effects of perceived inadequacy. A great deal of work still needs to be done on psychological approaches to prevention and on the evaluation of prevention programs in the black community (Aguirre and Zambrana-Shojaei 1978).

Related Actions

Treatment and prevention strategies are perhaps the most critical social responses to the problem of alcoholism, but the government, the community, and professionals can also play a vital role. Roman and Gebert (1979) suggested that there is little major leadership or real concern about the linkages between alcoholism and social problems in

the United States; that in a real sense there is social-structural support for the continued misuse of alcohol in the community. In some sense the same criticism may be leveled at the professional response to the problem. In 1979 (Keller 1979) the proceedings of a symposium in which leading scholars tried to define research priorities in alcohol paid little or no attention to blacks and other ethnic minorities—25 percent of the U.S. population (40 percent of alcohol victims). Black alcohol problems continue not to receive the attention and resources necessary to at least contain them, and the research reflects this (Harper 1978). A look at who is doing the research and the allocation of resources raises serious questions about the continued absence of black professionals in medicine, nursing, psychology, social work, and the other social sciences.

Methodological Issues

The problem of alcoholism is indeed a difficult one, consisting of the interaction of multiple variables in a range of locations over differing time periods. Research on the problem requires a historical and systematic methodology if we are to make scientific inroads into developing solutions. There may not be one alcoholism, but several. We raise now the issue of methodological limitations of the literature reviewed.

The first central critique of the literature is the consistent failure of most of the studies to adequately situate their work in a historical context. The majority of studies lacked a clear conception of the problem, had an ill-defined theoretical base and a weak design, and ended up with questionable analyses (Cox and Luhrs 1978). In the absence of critical theory, most designs were randomly or mechanically chosen and consisted largely of correlation type comparisons which started with two different groups and ended by showing that the groups were different (Best 1979). Very little serious attention was given to the issues of class, the process of history, and current practices. When culture was considered, the variables were insufficiently grounded in the history of the group being considered and researchers equated color with culture.

In the absence of critical theory, we are not sure of the researchers' view of the problem, the design of instruments, or the interpretation of data. This is especially disturbing in light of the conceptual shift from seeing alcoholism as a categorical, unitary concept to seeing it as a multivariate process on a continuum. Consequently, results were difficult to compare or even to understand sometimes.

Another problem concerned the designs used in the works that can be legitimately classified as research. These fell into three major categories: correlation, ex post facto, and survey. These limitations do

not produce definitive results. Where are the experimental and longitudinal designs?

Yet another problem was the absence or lack of adequate controls or the assumed or imagined existence of independent variables. A group of white alcoholics is not an adequate control for a black group. In a black community there are also subcultural groups (e.g., Haitians, West Indians, Cubans); these groups were rarely considered by the body of literature examined here. These groups may be examined more usefully through cross-cultural comparisons, although such comparisons would not necessarily satisfy the control issue.

Other limitations included sampling problems, assuming homogeneity of black alcoholics as a group, failing to entertain alternative hypotheses at several levels of analysis, and tending to use the most captive populations (lower class blacks and prisoners).

Finally, one issue, which grows out of the black reality, must be examined scientifically. How are we to interpret findings in an arena fraught with narrow value assumptions and beliefs that very often result in oppression and racism? We must remain vigilant to alternative explanations of the black reality.

Implications and Conclusions

What are the implications from this array of literature for the black populations? One definitive conclusion derives from the examination of this literature "for signs of progress": Since the last report to the U.S. Congress, the problems and the consequences of black alcoholism have become even graver, and very little is being done about them. The problem of alcoholism has not yet been fully legitimized in the black community so as to allow for community-defined standards, folkways, and mores on the subject of drinking. What we see rather is an increasing use of alcohol at an earlier age by youth and a growing intensity of use by women, with serious implications for fetal alcohol syndrome.

At another level, the general failure to devote more resources to the problem has implications particularly for those who are victims of alcoholism. This failure may imply not only a lack of serious attention to the plight of a large percentage of the population but also the use of alcohol to maintain a particular class relationship. We must begin to entertain the latter hypothesis as a plausible alternative.

The lack of systematic longitudinal multivariate and lifespan developmental studies has serious implications for developing scientific situations for so complex a problem. There were too few attempts to study children or the elderly, or to look at multiple variables simultaneously, or to look at these variables over some historical time period. In this same regard, in trying to understand the complexity of the problem, we must once again begin to look at family variables or familial alcoholism, social

variables or stress alcoholism, biological variables or hereditary alcoholism, cultural variables or cultural alcoholism.

This is a critical time in the alcoholism field given the greater willingness of the rich and the famous (from baseball stars to senators) to talk about the problem. We must head for a new research order in the examination of alcoholism in the black community. Fanon's personal pleas quoted at the beginning of this paper must not be forgotten. We must search for new ways through research to allow individual blacks and black groups to positively recreate themselves and their communities.

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Chapter 15

Alcohol Drinking Patterns: The Asian Americans

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Abstract

The impression that Asian Americans do not consume as much alcohol as Americans and Europeans is generally supported by research studies. However, there are over 20 nationalities covered by the term Asian American, and there are wide variations in drinking between and among them. For example, Indonesian and Burmese immigrants come from a Moslem background where drinking was prohibited; the Chinese come from a Confucian, Taoist culture where moderate drinking was the norm, while the Japanese come from a country which has developed an urban, business oriented drinking style.

Asians apparently metabolize alcohol much more quickly than do Caucasians, causing a 'flushing reflex' and a high degree of discomfort. However, the relationship between the sensitivity and alcohol consumption remains a topic for debate.

Very few Asian Americans use community treatment facilities. Generally tolerant norms for drinking, the feeling that alcohol was not a significant problem, the idea that families should take care of their own, the lack of bilinqual, bicultural treatment facilities, the unfamiliarity with treatment services and feelings of shame were hypothesized as reasons behind the low use of services.

Most studies have predicted a rise in alcohol consumption and of alcohol-related problems as acculturation takes place. As each of the Asian groups become more American, the American styles of drinking and of alcohol-related problems should increase, since the initial base of drinking among Asian Americans was generally lower.

Any study focusing on the Asian American will break new ground since there is so little research on the group. Perhaps the main topic of interest might be the presumed ability of most Asian American groups to drink in moderation with a minimum of problem behavior.

Introduction

Asian Americans remain one of the less visible populations in the United States. One factor contributing to this lack of visibility is the small number of Asian Americans—less than 2 million according to the 1970 U.S. census. However that number increased to over 3,500,000 by 1980

primarily because of increased immigration, especially from Korea and the Philippines. Other factors contributing to the Asian Americans' lack of visibility are their geographic distribution, with a heavy concentration in Hawaii and/or the Pacific Coast (especially in California); their housing patterns (a high but lessening degree of segregation); and their lifestyles which historically have involved keeping a "low profile" and thus minimizing conflict with the dominant community.

As a result of these factors, much of what is known about Asian Americans verges on the stereotypical, especially in discussions of alcohol use and abuse. It is generally assumed that Asians represent a nondrinking population; that they have cultural taboos against drinking, which are reinforced by allergic and toxic reactions to alcohol; that even when they drink, the degree of associated problem behavior is low; and that for those who might have problems, the use of alcohol treatment facilities is minimal. These assumptions are not necessarily valid; this paper attempts to present a more accurate perspective on alcohol use and its consequences in the Asian American population. The primary source of data is research studies, with additional information gathered from interviews with Asian Americans knowledgeable about alcohol use.

Asian American Groups

One can appreciate the fallacy of an overall Asian American stereotype regarding alcohol drinking patterns, problems, and treatment by looking at the number of nationalities included in the Asian American category. For example, in Los Angeles, it includes immigrants and their children from Burma, Cambodia, China, Guam, India, Indonesia, Japan, Korea, Laos, Malaysia, Pakistan, the Philippines, Samoa (and a number of other Pacific Islands), Sri Lanka, Thailand, and Vietnam. These groups have unique cultures and probably differ in their attitudes toward, and use of, alcohol and in their means of socialization, control, and prevention of problem drinking. There also are generational differences and variations in acculturative and adaptive patterns. Thus, the Asian American category may be useful only as a broad descriptive term referring to immigrants and their children from a restricted geographic area. Background

A number of cultural themes in the Asian countries are important to an understanding of Asian attitudes toward, and use of, alcohol. There is a Moslem influence in Indonesia and Malaysia where drinking is prohibited and in Burma where drinking is not allowed in public (Ratanakorn 1976). The Confucian and Taoist streams in China emphasize that drinking should be done in moderation and that, while drinking can be pleasurable, one should not act like a fool (Singer 1974). The Japanese culture is influenced by Chinese philosophy and Buddhism, although current drinking practices in Japan reflect a much more urban, business-oriented style. Lemert (1964) described the history of drinking among Pacific Island groups which started with the liquor

brought by European voyagers in the middle-to-late 18th century. The most appropriate generalization about Asian drinking patterns is that historical background, attitudes about and norms for drinking, and use of alcohol differ by nationality.

However, research indicates that, as a whole, Asians generally drink less than Europeans and other nationality groups. For example, a study in South Africa comparing whites, coloreds, blacks, and Asians (mostly Moslems) found that persons of Asian origin drank the least (Knischewski 1975). In a questionnaire study of Australian, Jewish, Chinese, and Japanese college students in Australia, Sargent (1971) reported that the Chinese had the fewest problem drinkers.

Studies of groups in the United States also reported lower rates of drinking among Asian Americans. In a study conducted at the Kaiser-Permanente Hospital in Oakland, drinking was most prevalent among whites and least prevalent among Orientals (Klatsky et al. 1977). In a study of adolescent drinking patterns in the United States, Rachal et al. (1975) reported that Orientals had a high rate of abstinence, but that among those Orientals who drank, there was heavy alcohol consumption.

A study comparing Chinese, Japanese, Filipinos, Hawaiians, part-Hawaiians, and Hapa Haoles (half-white) in Hawaii with Caucasians indicated that, although there was widespread drinking among all ethnic groups, a larger proportion of Orientals reported no use of alcohol; Caucasians reported heavier use of alcohol; and a larger proportion of Oriental drinkers reported facial flushing as a result of alcohol consumption. Persons with one Oriental and one Caucasian parent were similar to Caucasians in the frequency of consumption, were intermediate between Orientals and Caucasians in the amount consumed, and were similar to Orientals in facial flushing after drinking (Wilson et al. 1978).

Sue et al. (1979) suggested two types of explanations for the low level of alcohol consumption by Asians compared with Caucasians. One explanation dealt with a genetic racial hypothesis concerning alcohol sensitivity and aversion; the other dealt with cultural differences in terms of history, attitudes, and values.

Alcohol Sensitivity: Physiological Differences

One of the more widespread generalizations about Asians (or Mongoloids as referred to in some studies) concerns the "flushing response." Wolff (1973), comparing adult Caucasians with adult Japanese, Taiwanese, and Koreans, found that 83 percent of the Asians responded to alcohol with visible flushing and an increase in optical density compared with only 2 percent of the Caucasians. Similar findings were reported for infants. Seto et al. (1978), in comparing Chinese, Japanese, and Caucasian men, found that 33 of the 52 Asians

developed a cutaneous flush, sometimes accompanied by hives, whereas only 1 Caucasian in the sample of 11 flushed even mildly. Zeiner and Paredes (1978), comparing white and Chinese volunteers, found that Chinese subjects absorbed alcohol more quickly and attained significantly higher breath acetaldehyde. The researchers concluded that a higher percentage of Chinese than whites were biologically sensitive to ethanol, and thus that the Chinese have a biological aversion to alcohol which serves as a protection against excessive drinking and alcoholism.

Ewing et al. (1974) concluded that physiological factors were responsible for the sensitivity of Chinese and Japanese to alcohol. Researchers at the University of North Carolina's Center for Alcohol suggested that a sudden buildup of acetaldehyde in the blood occurs when Orientals drink because they have a faster initial rate of alcohol metabolism. This faster rate is probably due to the presence of "an atypical form of the liver enzyme, alcohol dehydrogenase. Acetaldehyde, a by-product of alcohol metabolism, has been previously shown to increase ventilation and the heart rate, and to cause flushing of the face after intravenous infusion" (National Institute on Alcohol Abuse and Alcoholism 1978).

A study by Goodwin (1979) supported the finding that Orientals can drink only a small quantity of alcohol without developing adverse physiological reactions. More women than men and more Jews than non-Jews also exhibited this physiological protection against heavy drinking. Hanna (1978) found that Hawaiian Chinese and Japanese metabolized alcohol at a significantly higher rate than Europeans; in an earlier study (Hanna 1976), he also cited American Indians, Hawaiians, Samoans, Eskimos, Taiwanese, and Koreans as possessing this physiological difference. However, Hanna also mentioned that wide individual variations existed within each of these groups. Schaefer (1978), in studying the alcohol metabolism rates of male Hindus in South India, disputed the generalizations concerning physiological differences in alcohol metabolism rates. He compared rates for North American whites, South and East Asians, native North American Indians, and Eskimos and concluded that no group is consistently faster or slower than another group in metabolizing alcohol.

Reed and Kalant (1977) indicated that a bias may exist in calculated rates of alcohol metabolism. They contended that the rate of alcohol metabolism is a function of the mass and metabolic state of the liver and total body weight, including fat and lean body mass. Comparing leaner Chinese with more adipose Caucasions would bias metabolic results.

The results of research comparing Asians with whites generally support the hypothesis that there are racial differences in toxic responses to alcohol. However, it should be noted that not all Asians exhibit the flushing response and that there may not necessarily be a cause-effect relationship between the toxic response, the consumption of alcohol, and problem behavior. For example, in a study of Chinese

and Japanese Americans, Sue et al. (1979) found a nonsignificant relationship ($r = -0.17$) between facial flushing and reported drinking patterns.

The effect of the toxic response on alcohol consumption among Asians will probably be in terms of gross average drinking statistics. However, the lower average figure for Asians should not be construed as indicating a "lack of problems"; the figures could be interpreted to illustrate that a small group of Asians drink a lot and are therefore more prone to problems. For example, Sargent (1973) quoted Moore, who said, "a dry Chinese is as dry as a rock and a wet one can drink more than any other people on the globe" (p. 69).

There is also some evidence concerning alcohol consumption and its relationship to certain diseases. In studying coronary heart disease among Japanese American men in Hawaii, Yano et al. (1977) found that alcohol consumption (primarily beer) was associated with a lower risk of myocardial infarction. The association was reflected in lower rates of coronary heart disease among drinkers than among nondrinkers, although the dose-response relation was observed only in the moderate consumption range. Blackwelder et al. (1980), using the same sample, concluded that drinking appears to have some benefits in relation to heart disease and mortality but that drinkers run a higher risk of death from cancer and stroke than nondrinkers.

The "Old" Asian Groups

The Chinese and the Japanese are presented together because they represent the "old" Asian immigration and a number of studies make a direct comparison between them. Both groups faced discrimination and prejudice in the United States; both were forced into segregated living conditions; and both comprise the most numerous Asian American groups. As of the 1970 census, the Japanese were the most numerous with a population of 588,324, of which 213,277 were residing in California and 217,175 were living in Hawaii. The Chinese totaled 431,583, with 170,419 in California, 81,903 in New York, and 52,583 in Hawaii. However, the 1980 census shows that the Chinese are now the most populous Asian group with 806,027 and the Japanese as the third, with 700,747.

The Chinese and Taiwanese

What few studies there are refer primarily to Hong Kong and Taiwan, not to the People's Republic of China. However, because the roots of the Chinese in Taiwan are heavily influenced by Confucianism and Taoism, a philosophical similarity can be assumed between the islanders and the mainlanders. Both philosophies emphasize drinking in moderation (Singer 1972; Wang 1968). Henderson (1976) mentioned the repugnance toward public drunkenness in India and China. The

famous Chinese poet of the Tang period Li Po mentioned the pleasures of wine, and the existence of wine shops was noted by Marco Polo (Sargent 1973).

Singer (1972) attributed the low amount of alcohol consumption in Hong Kong to the lack of drinking-centered institutions, to the philosophy of moderation, to the restriction of drinking to males, and to the practice of drinking only at mealtimes. He also found that, although the Chinese have a low-to-moderate prevalence of alcoholism, they have a high prevalence of addiction to narcotics, especially opium (Singer 1974). He noted that the traditional ideology of the Chinese, which includes acquiescence, moderation, propriety, intellectual control, and familial authority, supports the choice of drugs over alcohol. Alcohol is more often associated with violence and a lack of restraint. Singer (1974) mentioned historical events and the availability of opiates as other factors leading to the choice of drugs over alcohol. He also wrote that neither use of drugs nor use of alcohol was considered a major problem in the People's Republic of China.

Chafetz (1964), in writing about Taiwan, mentioned that in 17 years no more than 10 cases of alcoholism were reported among the Chinese population. Possible explanations include the absence of solitary drinking because alcohol was only taken at parties and meals, strong social sanctions against drunkards, and well-defined ways of behaving with friends and strangers. There was also the strong Confucian moral code with its clear role prescriptions for the sexes and the various age levels. Chafetz discovered more visible alcoholism among the Taiwanese aborigines, whose drinking styles apparently were influenced by the Japanese and the tribal drinking patterns of Southeast Asia. Rather than follow Chinese drinking codes, the aborigines used alcohol to cope with tension and life's hardships. The confusion of sex roles, economic frustration, and the encroachment by the Chinese on aborigine culture were hypothesized to be sources of stress that led to drinking. There was little official concern about alcohol treatment programs in Taiwan due to the overall lack of psychiatric resources and to the low level of alcoholism in the dominant Chinese population.

The Chinese Americans

The Chinese in America are also characterized by a low incidence of alcoholism. Hospital admission rates for Chinese American alcoholics are lower than for other patient groups in Hawaii, New York, and San Francisco (Barnett 1955; Chu 1972; Rosenthal 1970; Wedge and Abe 1949).

Chu (1972) mentioned that, although Chinese American use of alcohol is common, alcoholism remains relatively rare because of the cultural pattern of moderate drinking. He studied the drinking patterns of 41 low socioeconomic status single Chinese males in San Francisco and found that over 60 percent were abstainers while 7 percent were heavy drinkers. Attitudes toward alcohol indicated high disapproval of

drunken behavior under any circumstance. Observational data indicated that heavy social drinking among his sample did not occur in bars. The Chinese bar clientele was composed of second or third generation college-educated Chinese and middle-aged Chinatown businessmen. Chu (1972) concluded that, as the Chinese become more American—including an increase in female authority, a decrease in parental authority, and the acquisition of the American pattern of allegiance to impersonal ideals—the incidence of alcoholism among the Chinese could be expected to rise. Chu (1972) wrote that another reason for the low rates of alcoholism among Chinese Americans was the situation- or social-centered norms of the Chinese in contrast to the individual-centered orientation of Americans.

Barnett (1955), in a study of New York's Chinatown, found that drinking was permitted especially at social functions, but that excessive drinking was discouraged and tightly regulated by family and community attitudes and values. He concluded that Chinese Americans drink, but in moderation.

The Japanese

The current Japanese style of drinking reflects a number of streams. Chafetz (1964) wrote that prior to World War II the Japanese drank alcoholic beverages but that alcoholism was rare. During this time, Shintoism and Buddhism provided clear prescriptions for age, sex, and family roles. Since the war, many of the older values have been questioned, and the influence of America, industrialization, and urbanization have brought about cultural changes, including a rising incidence of alcoholism. In 1955, for example, 1.6 percent of hospitalized patients were alcoholic; by 1959 the proportion had risen to 2.6 percent. Nukada (1972) reported that between 1951 and 1970 the annual per capita alcohol consumption rose from 1.4 to 4.7 liters. Sargent (1973) theorized that Japanese drinking was being transformed from a convivial pattern to a self-oriented style, with modern Japanese drinking to relieve anxiety and tension.

The increase in leisure time caused, in part, a rise in weekend intoxication, which in turn resulted in a higher rate of traffic accidents. The Japanese' traditionally lenient attitude toward drunk drivers has changed over the last decade (Chafetz 1964), with heavier punishments being handed out, such as the suspension of driving privileges and large fines.

Gedig and Gedig (1977) discovered that in Japan alcohol consumption and alcohol problems paralleled economic cycles. They estimated that 25 percent, or 17.5 million, of the population (70 million were of drinking age) drank alcoholic beverages; that 1.5 million were habitual drinkers; that 300,000 were problem drinkers; and that between 30,000 and 50,000 persons were in need of immediate help. Per capita alcohol consumption rose from 2.3 liters in 1934 to 5 liters in 1975, with particularly steep increases among women and youth. Cirrhosis deaths

also rose, from 5,678 in 1950 to 13,564 in 1972. There was a shift away from the more traditional drink, sake, to beer and to Western-type liquor.

Wynder and Hirayama (1977), in comparing consumption of absolute alcohol, noted that in 1971 the United States white population over age 15 consumed 9.31 liters per capita, whereas in 1974 the Japanese consumed 6.65 liters per capita. About 46 percent of all alcohol consumed in the United States was whiskey and in Japan, sake, although sake was preferred in rural areas and beer was preferred in urban areas.

Drinking in Japan starts as early as age 11 since alcohol is served at ceremonial and traditional events (Tani et al. 1975). Hayashi (1978) indicated that excessive drinking was involved in 37 of 47 cases before a divorce conciliation court and that physical violence by an intoxicated husband was frequently observed.

Drinking is organized and institutionalized in Japan. The bar culture with its hostesses caters to a wide range of Japanese males. Working men of all ages and occupations have their favorite bar or drinking place, and in the more exclusive establishments, the "mama san" has a fleet of taxis and private automobiles to drive regular customers home. Many Japanese still rely upon friends and companions to take care of them when drunk; thus, the lone drinker is more likely to show up in statistics on drunk drivers or drunkenness arrests.

Ohashi and Nishimura (1978) reported that drinking was intimately related to Japanese social life. In 1976, Japan ranked 31st in terms of world consumption of liquor, but the authors predicted that, with the advent of Western-type liquor, excessive drinking will rise. They described four styles of Japanese drinking:

1. "Banshaku," or drinking at dinner. This type of drinking was done primarily by family men for relaxation after a day at work.
2. Drinking to celebrate annual events such as Obon, or New Year's.
3. Drinking at a roundtable after meetings and conventions for relaxation, friendship, and to lessen communication barriers.
4. Drinking with one's close friends after work.

Shibata et al. (1978) cited psychological dependence and depression as motives for drinking; Chafetz (1964) mentioned personality disturbances and sociocultural factors. There was a clinical impression that many alcoholic patients were being shielded by their families and only came for treatment in the late stages of their illness.

Much of Japanese drinking is related to easing communication barriers. In a vertically stratified system one of the few opportunities to verbalize feelings to "superiors" is when drunk. For example, the young assistant professor can get up and say things about the chairman that he normally would not say. Drinking may also help a "shy" male to relate to females in a different manner than when he is sober.

The Japanese Americans

There is little empirical evidence concerning alcohol consumption in the Japanese American population. Kitano (1976) reported that drinking was common at celebrations such as weddings or at community picnics, where normally sober, hard-working family men were given the opportunity to get drunk in public (but primarily within the ethnic group).

DeVos (1978) believed that drinking roles for Japanese Americans would not be prominent because their values emphasized moderate drinking habits. The strong family, an achievement orientation, and a concern for family name and reputation were other factors that controlled alcohol consumption (Kitano 1976).

Chu et al. (1978) found that Japanese American families generally were permissive toward drinking but that there were generational differences. They attributed the differences to acculturation, with the Issei (first generation immigrant) being the least permissive. Drinking among Issei women was rare. The Nisei (second generation) and Sansei (third generation) patterns of drinking were much more diverse (i.e., in restaurants and bars, at dances), possibly due to lessening discrimination. Japanese Americans generally were characterized by low social pressure to drink, negative sanctions for excessive drinking, and a lack of violent or destructive behavior. The current generation of parents also participated in socializing their children toward the use of liquor.

Like their peers in Japan, the small sample of Japanese Americans preferred expensive, status liquor; sake drinking was minimal. The heaviest drinkers were middle-aged Nisei males (many of whom grew up in World War II concentration camps and served in the armed forces) and professionals such as lawyers and businessmen (Chu et al. 1978). Very few data are available on the alcohol consumption of lower class Japanese Americans and those not living close to their ethnic community. Comparisons Between Chinese Americans and Japanese Americans

Sue et al. (1979) compared the drinking habits of Chinese, Japanese, and Caucasian college students. The Asian sample drank less than the Caucasian sample. The more acculturated Chinese and Japanese drank more than their less-acculturated counterparts.

Asian parents were perceived as having more negative attitudes toward drinking than Caucasian parents. Surprisingly, the Asian Americans did not answer that alcohol harms the body as strongly as the Caucasians did, which is contrary to the hypothesis of greater toxicity among Asians. The relationship between facial flushing and reported drinking patterns was not significant; although flushing is a physiological response, the social consequences for this group may be more important. The authors concluded that their findings tended to support a cultural explanation of drinking patterns.

Chu et al. (1978) studied the alcohol drinking patterns of a small sample of Chinese and Japanese in Los Angeles. They found that in

both groups the acculturated, professional American-born male drank more and that attorneys and businessmen regarded drinking as necessary to their work. Gambling was hypothesized as a possible substitute for drinking.

Groups vulnerable to excessive drinking included the old, single isolated Chinese male and the Nisei businessman or professional who frequently engaged in social drinking as part of his work. Discussions with community resource people and the Pacific Asian Alcoholism Task Force in Los Angeles indicated a relationship between heavy drinking and marital problems.

Facial flushing did not deter most of the respondents from further drinking. Some Asian Americans reported embarrassment; one said she enjoyed the cosmetic reddening of her face; others felt weak and uncomfortable, yet they continued to drink (Chu et al. 1978). The findings support the conclusion of Sue et al. (1979) that there is a nonsignificant relationship between the flushing response and alcohol consumption.

Arrests for Liquor Law Violations

Both Chinese and Japanese Americans have minimal records of arrest (according to FBI statistics). However, it is interesting to note that if a member of one of these two groups is arrested, the cause is very likely to be a liquor-related violation. For example, in 1978, FBI statistics indicated that for Japanese Americans, "driving under the influence," "liquor law violation," and "drunkenness" combined to provide the highest arrest category. These liquor-related offenses accounted for 27.8 percent of Japanese American arrests. In contrast, liquor-related offenses for the Chinese came to only 13.1 percent. Figures for other groups were as follows: whites, 31.9 percent; blacks, 14.6 percent; and Indians, 47.2 percent. Future research needs to explain these differences.

"Old New" Asian Groups

The Koreans and the Pilipinos

"Old new" Asian groups refer to those who were here in small numbers at the beginning of the 20th century but whose major immigration is of more recent origin. The two major groups in this category are the Pilipinos and the Koreans. The 1970 census enumerated 69,510 Koreans and 336,731 Pilipinos, but due to recent heavy immigration, 1980 figures show 361,529 Koreans and 774,640 Philipinos. The two groups are similar in some ways: they both were "colonized"—Korea by the Japanese for many years; the Philippines, first by Spain and then by the United States. Both groups have reputations in the United States for heavy drinking, but reliable data are

unavailable to validate this impression. There are also significant cultural differences—the Koreans come from a more Asian background with influences from China and Japan; the Pilipinos come from a Moslem, Spanish, and American colonial background.

One book from Korea (*Alcohol* 1978) presents a romantic, pleasurable view of drinking. Based on the impressions of 59 Korean authors, the bulk of the writing carried the theme that liquor was a friend, that it gave courage, friendship, love, and sex; and that it helped the drinker to ward off alienation. The warnings about alcohol were Confucian—one could drink as much as one wanted, but one should never drink to the point of acting stupidly. Drinking was primarily a male activity, and the typical setting for drinking was with friends and companions.

The former director of the Los Angeles Korean Community Mental Health Center (Lee 1980), felt that Koreans come from a culture in which alcohol use is common, especially among males. A common greeting in the old country might be, "Let's go for a drink." Females tended to drink mainly at celebrations and dances.

Lee (1980) reported that a high proportion of the cases at the clinic were related to alcohol. Wives complained about violence, but referrals to alcohol treatment programs generally did not work, primarily because many Koreans view alcohol as part of their culture—drinking is to celebrate, to mourn, to feel good, to find friends. Treatment, if any, probably takes place within the home and consists of admonitions and attempts at social control. The use of "outside" professionals is felt to be rare.

Interviews and observations with selected Korean American families indicated a wide diversity in drinking styles (Kitano 1980). One family, from a Seventh Day Adventist background, prohibited the use of any alcohol, while another family showed moderate drinking by the father (a professor) and the sons, but no drinking by any of the female family members. Most of the families were composed of recent immigrants so that the effects of Americanization and acculturation on alcohol consumption still appeared to be minimal.

One development in the Korean American community is the interaction between business orientation and alcohol. Light (1977), in analyzing the retail liquor industry in Los Angeles, found a large number of Korean proprietors. The Koreans were involved in the liquor industry by almost 20 times their proportion in the general population (the Chinese and Japanese also were overrepresented, but not nearly to the same extent). A pattern which Light labeled *ethnic succession* refers to owners of European background selling their liquor licenses to Asians. If the trend continues Asians will soon become the predominant ethnics in the ownership of Los Angeles retail liquor stores. It is interesting to speculate which ethnic group might be next in line for ethnic succession. However, the primary interest of this paper is the relationship between ethnic ownership, use of alcoholic beverages by the ethnic group, and programs for prevention and control. The relationships are not clear and should be a topic for future research.

Pilipino Americans span several generations. They can be divided into the following major groups:

1. The first generation, which is composed of males who immigrated in the 1920s. Most went into agricultural labor and retained their native dialects. Their acculturation has been minimal.
2. The second and third generation American-born children who have little contact with their native land, language, or culture.
3. The post-World War II arrivals, many of them veterans and war victims.
4. The new immigrants, which include many professionals who have come here under the more liberal immigration laws of 1965.

Alcohol drinking patterns no doubt vary for each of these groups. Probably the most vulnerable to alcoholism would be the single male early immigrant whose income and acculturation have been minimal. Many of the new immigrants have also had to face role and status changes that can lead to drinking. For example, highly educated Pilipino and Korean males have often found employment as janitors and hospital orderlies. Many husbands have found that their wives are more easily employable and that problems of language and culture have diminished their roles as family head and provider.

The Pacific Islanders

Marshall and Marshall (1975) wrote that alcoholic beverages were unknown to the inhabitants of the Caroline, Gilbert, and Marshall Islands, and probably the Mariana Islands, before Western contact. The technique of fermenting beverages probably was introduced to the Chamorros of the Marianas by the Pilipinos who accompanied the Spanish colonizers in the 17th century. Imported trade alcohol became available in the 19th century, and drunkenness and violent behavior were often reported during this period. It is thought that the violent behavior may have been learned from the early traders and whalers who first introduced the natives to drinking. Drinking appeared to be primarily a male activity.

Lemert (1964) compared the drinking styles of Tahiti, the Cook Islands, and Western Samoa to explore the possible relationships between forms of drinking, cultural values, costs, and social controls. He found that the forms of drinking were intimately related to the cycles of work and play. The heaviest burden of work fell upon the young, unmarried males who had to enter a money economy imposed upon them by external forces and work for wages. Heavy weekend drinking and periodic indulgences were expected among this population.

Lemert discovered that addictive drinking with its resultant changes in personality and serious organic pathology such as cirrhosis of the liver was absent among the Polynesians. Guilt over drinking and drunkenness did not seem to be a part of the traditional culture. A person was not disadvantaged by a history of drunkenness, especially if he or she renounced drinking. There was little moralizing about drinking.

Historically, the Samoans differ from the other island peoples because they successfully absorbed Christianity, resisted foreign domination, and maintained their village-based social organization. Values included conformity, acceptance of group decisions, ceremonial compliance, and politeness in interpersonal interaction. Values were reinforced through a system of social control administered by the chiefs (matai). Respect for the matais' right to make and carry out decisions was crucial to this type of system; thus direct aggression and hostility were discouraged. Drunkenness, especially among the young untitled males, was a problem that threatened the Samoan organizational structure because drinking might cause the young to overtly challenge the chiefs or to act with disrespect and resort to fighting. Physical violence, such as attacks, wife beatings, and drunken rages, has occurred and a "substantial number [of wives] have left their heavily drinking spouses and sought divorces" (Lemert 1964, p. 71).

The Samoans in the United States are reputedly one of the heaviest drinking Asian groups. Their migration to America began in the 1950s; in the 1980 census, there was 42,050 Samoans in America, with a high proportion living in California. Because they have not developed ethnic business, cultural, or community centers, they are not a visible community. They have an organizational structure modeled after the matai system of their homeland which encourages problem solving within the group (Shu and Satele 1977).

Casaclang (1980) mentioned the large quantity of drinking among a small group of Samoan males and the possibility of violent behavior. Drunk driving was one of the most common violations. There is little empirical data on Samoan American drinking, although it seems to be primarily a male activity and there seems to be no preference as to type of alcohol consumed.

Other Asian Groups

There is a lack of empirical data on the alcohol drinking patterns of other Asian groups such as the Burmese, Thais, Malaysians, Cambodians, and Sri Lankans. Chafetz (1964) mentioned that Thailand had an estimated 10,000 alcoholic patients in a population of 25 million, that social drinking was common, and that the amount of alcohol consumed was high. There were almost no regulations concerning alcohol consumption, not even concerning the minimum age for drinking. The Thais were seen as straying from Buddhist values and acquiring Occidental cultural values. Family closeness was seen as breaking down; women were working outside of the home; and alcohol consumption had risen. "Alcoholism is believed to result from chronic, heavy social drinking, underlying emotional problems, immaturity, bad social friends and companions who smoke Indian hemp" (Chafetz 1964, p. 299).

The end of the Vietnam War in 1975 resulted in the resettlement of approximately 120,000 Vietnamese in the United States (Liu 1979). The

1980 census reported 261,714 Vietnamese. Although there was an initial attempt at dispersing them throughout the country, they have clustered in California. Casaclang (1980) indicated that individual Vietnamese have exhibited severe cases of drunkenness but that the prevalence of drinking is unknown.

Treatment

Little information exists concerning the treatment of alcoholics in the Asian countries. Holmgren (1976) mentioned alcohol treatment at Kurihama State Mental Hospital in Japan (one of two separate mental hospitals with special departments for alcoholics). He noted the difficulty in obtaining a clear-cut picture of the extent of alcoholism because the Japanese believe that drinking is a private matter and the authorities have a laissez-faire attitude toward social problems. Japan has its own version of Alcoholics Anonymous (Danshukai); Reynolds (1977) reported the use of Naikan therapy, which relies heavily on introspection, and which aims at restructuring patients' views of the past in order to reshape their attitudes and behaviors in the present.

Psychological and counseling services are still at the beginning stages in most Asian countries. This is due partly to the strong assumptions about the role of the family in controlling and taking responsibility for problems, feelings of shame and embarrassment concerning deviant behavior; and societal priorities focused on other needs. Therefore, there is a tendency to limit the development of mental health services.

Many of these attitudes have been brought to the United States by Asian immigrants. Cheung (1979) reported that Asian Americans underuse mental health facilities at least partly because of cultural sensitivity to stigma, fear of losing face, the belief that problems are best handled within the family, and unawareness of existing services. Miranda and Kitano (1976), in writing about the problem of service delivery of mental health facilities to Third World communities, included service fragmentation, discontinuity, inaccessibility, and unaccountability as reasons for the underuse of facilities.

In summary, the provision of direct services to alcoholic Asian Americans faces a number of problems. Most Asian Americans do not recognize alcohol as a problem except when it occurs in their own family. Then there is a tendency to deny the problem or to hide it within the nuclear or extended family. If the affected person is willing to go for treatment, the facilities may be inadequate for a variety of reasons including cultural and language problems.

There are valid arguments for the development of special Asian American treatment facilities. For example both Kitano (1980) and Okano (1977) found that Asian Americans (especially the Japanese) would prefer to receive counseling from an ethnic agency. Because of

the lack of such resources, Japanese Americans turn to Japanese American ministers, or to relatives, friends, and family doctors for advice and counsel.

However, there may be limits to direct treatment before the community is ready to use such services. A special alcohol treatment facility for Asian Americans in Los Angeles currently has no Asian clients, although surveys of Asian American needs indicate that alcoholism and the lack of alcohol treatment services are major problems (Kitano 1980; Okano 1977; Sekiguchi 1975). There may be a need to educate Asian American communities about the use of treatment facilities.

The first Japanese American Alcoholics Anonymous group in Los Angeles has just started. It is expected that similar AA groups for Asian Americans will be developed as needed (Casaclang 1980). Some Asian Americans may be using the alcohol treatment facilities of the larger community, but no accurate count is available (the number is probably very small).

Prevention

The evidence points to an almost inevitable rise in alcohol problems among Asian Americans. Some Asian groups have immigrated to the United States with low rates of alcohol problems but the effects of urbanization, role changes in the family, cultural conflict, economic mobility, and acculturation are closely related to increased alcohol consumption and alcohol problems. Other Asian groups have come here with established drinking patterns; the availability of alcohol, acculturation, and the stress caused by interaction with the dominant community are also linked to increased alcohol consumption for these groups.

The social control networks may also be affected by acculturation. The roles of father, mother, and the family have changed, yet the assumption remains that the Asian family is more responsible for the behavior of its members than is the non-Asian family. This method of control may not be feasible in America.

The role of the family in prevention and treatment can be positive or negative. The larger unit can be helpful and the use of the entire family is not unusual in most Asian countries. However, the family may also serve a less than healthful function. In a study of mental illness, Kitano (1970) found that Japanese families, whether in Japan, Okinawa, Hawaii, or the continental United States, generally would moralize to the patient with admonishments such as "quit being lazy" and "get back to work," or would exile the affected person to a back room. If family members are to be used as a mental health resource, preparatory work with them should be encouraged.

Acculturation, exposure to advertising, and the need for prestige have affected the patterns of alcohol use among Asian American businesspeople and professionals. Affluence has led to "gourmet" drinking of expensive wines and name-brand liquors and to the image of drinking as a sophisticated activity (Chu et al. 1978). Prevention programs will have to take these rapidly growing phenomena into account.

Prevention programs will also have to take into account the high proportion of Asians in the retail liquor business. There are also many ethnic drinking establishments, patterned after the bars in Korea and Japan. These establishments generally have self-regulatory procedures so that overt problem behavior may be minimized. Problem behavior may be more likely to erupt among the youth at parties and dances—situations in which overdrinking, fighting, and driving under the influence are much more common.

Because the evidence indicates that few Asian Americans use existing treatment services, other strategies may have to be devised. It may be wise to mount educational programs prior to the development of direct services. Matsushima (1978) suggested using an active outreach program to inform the various Asian American groups of the effects of alcohol. Education and information programs using ethnic models, ethnic examples, and ethnic speakers proved effective in reaching Asian Americans who previously had not used various social services (Owan 1977).

Future Research

Almost any research concerning Asian Americans will break new ground. Questions of incidence and prevalence, drinking styles, and treatment and prevention of alcoholism by nationality group should receive the highest priority. The important theoretical issue is the relationship between drinking in the old country and the changes brought about by exposure to the American culture. Research focusing on alternatives to alcohol should also be explored. The role of the family and reactions to role and status changes remain important theoretical issues.

The effectiveness of the mass media on the drinking patterns of Asians should also be studied. To date, very few advertisements for liquor are aimed at Asian Americans, with the exception of local television stations such as those in Los Angeles where sake commercials are aimed at a predominantly Japanese audience.

Research and programmatic emphasis should be given to suspected vulnerable Asian American groups. The data indicate that relatively high proportions of most Asian American groups are not heavily involved in drinking but that those who do drink are apt to be heavy drinkers.

Much research has centered on the "flushing reflex," toxicity, and physiological responses to alcohol. Future research in this area might include the differential effects of alcohol on family members and an analysis of Asian Americans who are heavy drinkers.

Summary

The impression that Asians do not consume as much alcohol as Americans and Europeans is generally supported by research studies. However, because of the wide variations in drinking between the different Asian nationalities, it is difficult to arrive at generalizations without specifying the country of origin and understanding some of the historical-cultural factors contributing to the differences.

Asian Americans appear to drink less than Americans, although most research predicts increased drinking as a result of urbanization and acculturation. There is also evidence of wide variations between Asian American groups in terms of alcohol consumption and problem behavior, although empirical research findings are practically nonexistent.

The most thoroughly covered area of research deals with physiological responses to alcohol. Because they apparently metabolize alcohol much more quickly than Caucasians, Asians flush and react in a highly sensitive manner. However, it would be an oversimplification to attribute the lower rates of Asian alcohol consumption to this one factor alone, especially in light of the large between-group differences in drinking.

There was agreement in the literature that very few Asians would use community treatment services for alcohol at the present time. Generally tolerant norms for drinking, the feeling that alcohol is not a significant problem, the idea that families should take care of their own, shame, and the lack of familiarity with treatment services were mentioned as reasons for the low use of services. However, services responding to the needs of the Asian American community are being developed and may bring about a higher use of professional services.

Henderson (1976) saw the moderate pattern of Asian alcohol consumption as a model that the Western world could emulate. He stated that the West would begin to overcome alcoholism when its attitudes and behavior approach those of Asian countries where drunkenness is repugnant and where excessive drinking is deemed unnecessary for enjoyment. However, learning can go both ways—the more powerful Western influences may instead pull Asians away from their traditional drinking practices.

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